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THE OIL WEEKLY

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October 2, 1931

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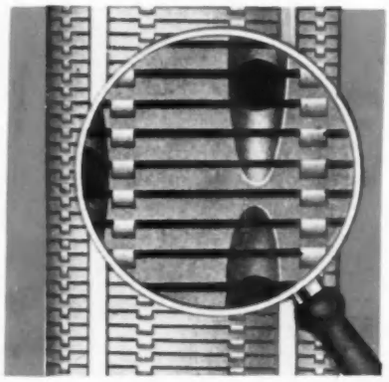

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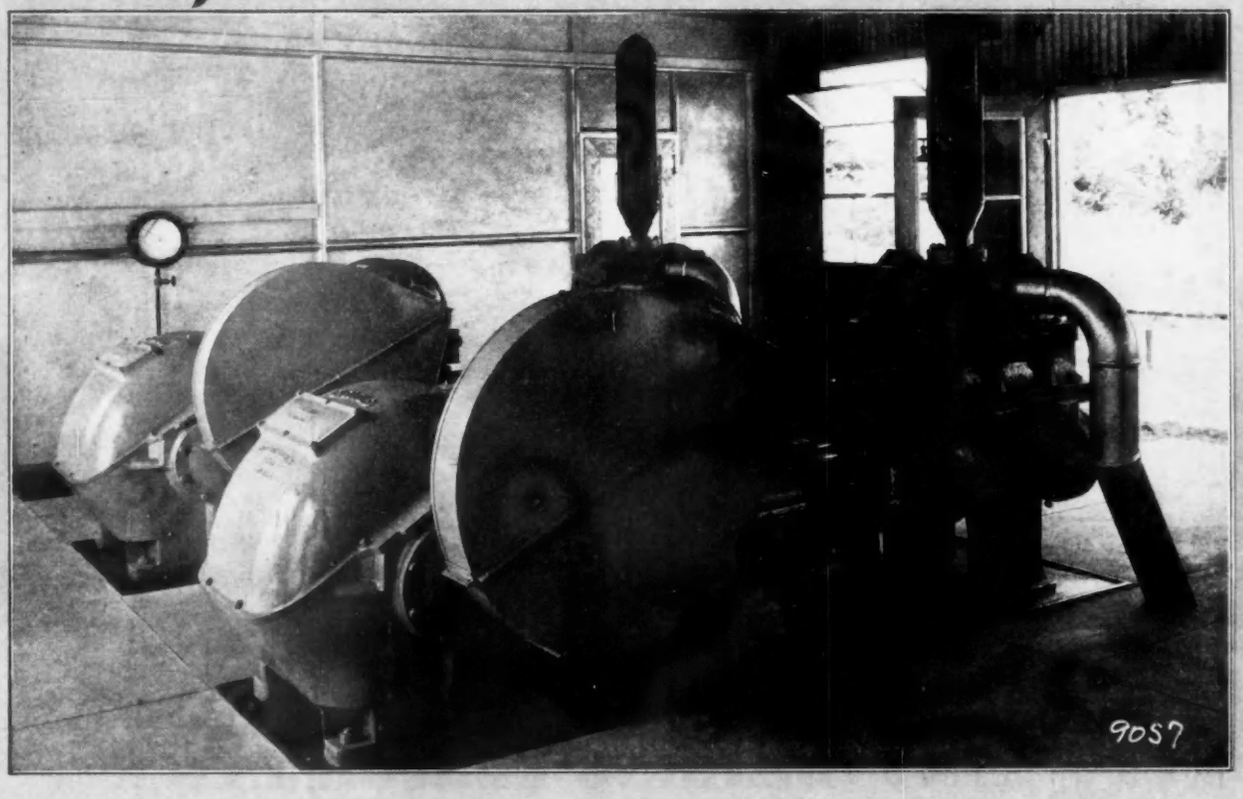

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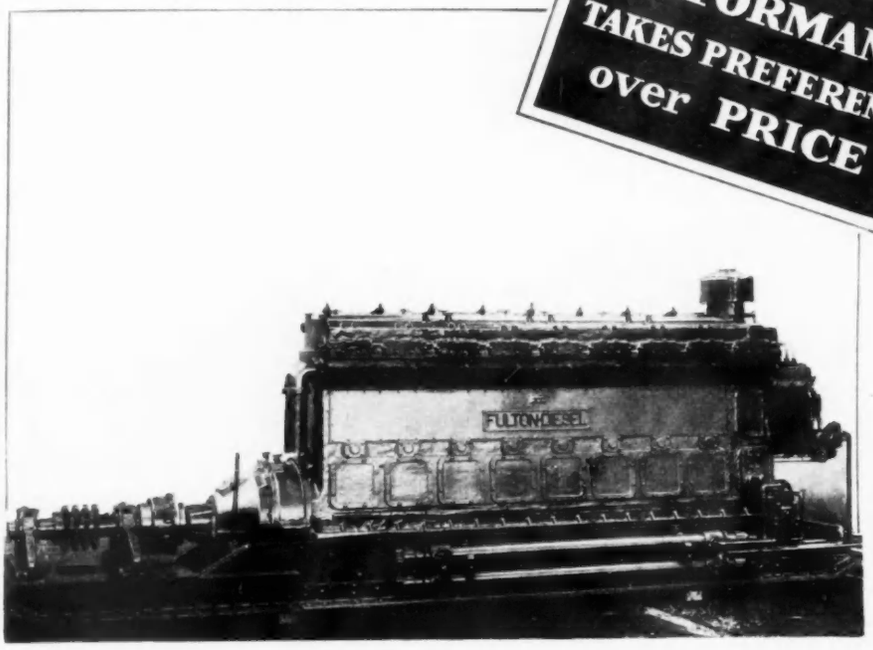

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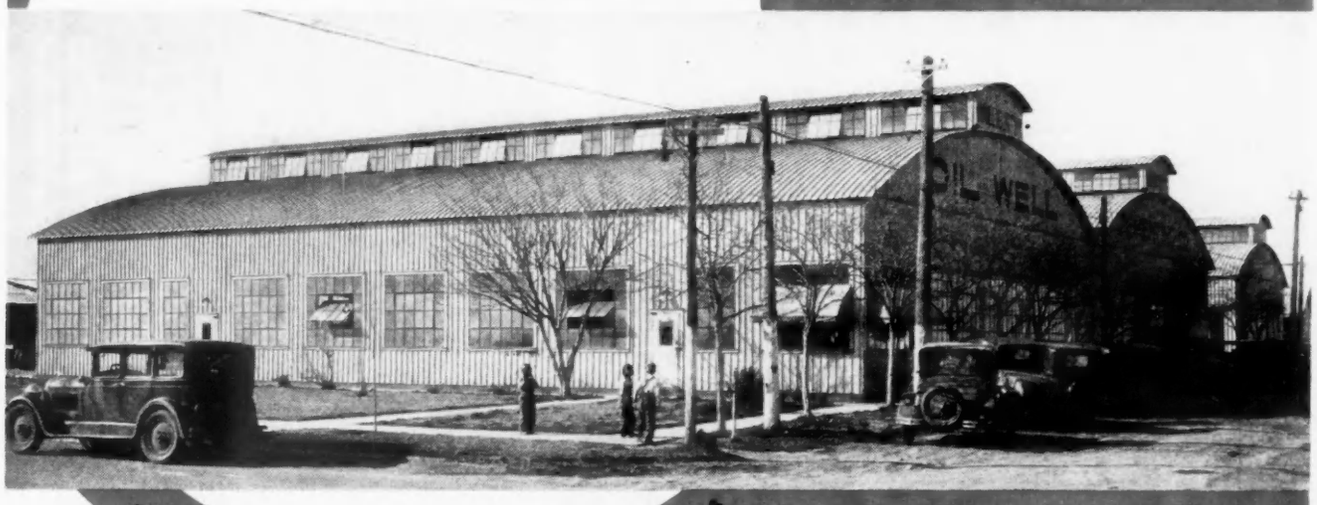
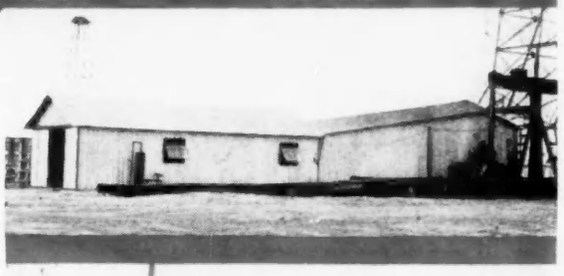


THE STANDARD OF OIL INDUSTRY STRUCTURES



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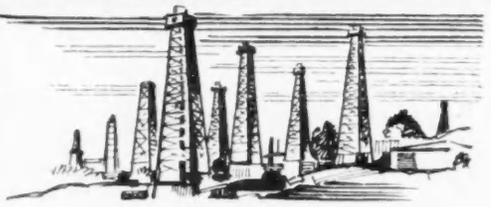
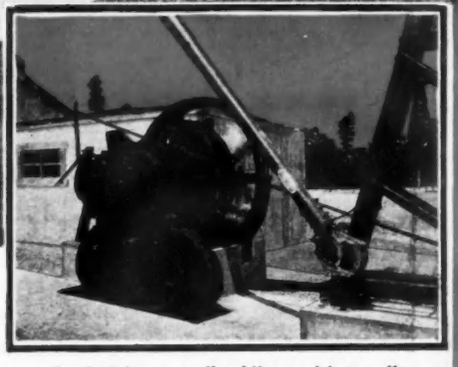
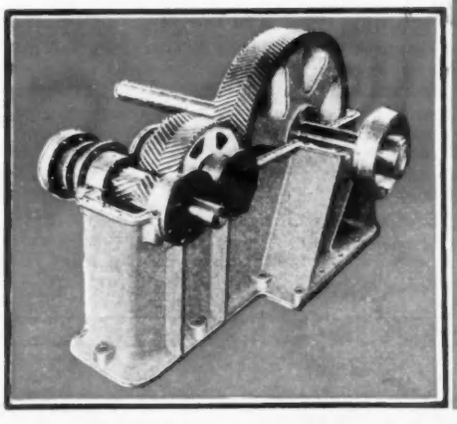


An East Texas installation



Crank "thrown-out" while servicing well

Gear cover removed showing type gearing



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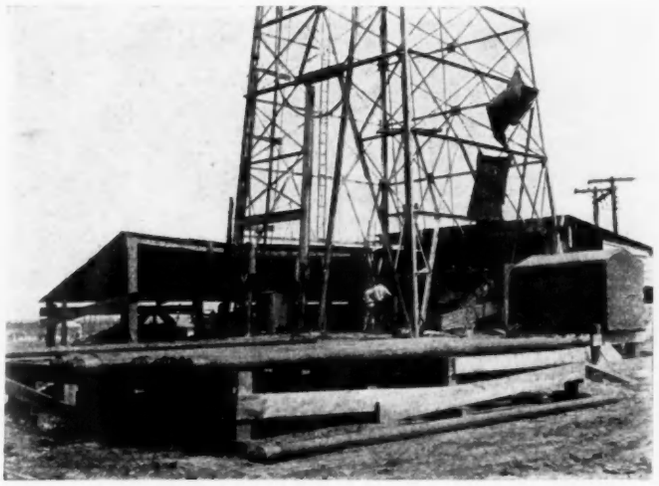

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For pipe of large diameter The Barrett Company will furnish equipment required to revolve pipe and spread enamel.

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THE OIL WEEKLY

October 2, 1931
Vol. 63, No. 3

S. W. ROBINSON
Editor

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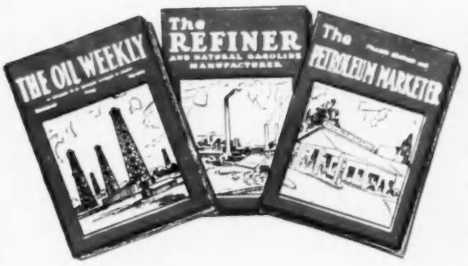

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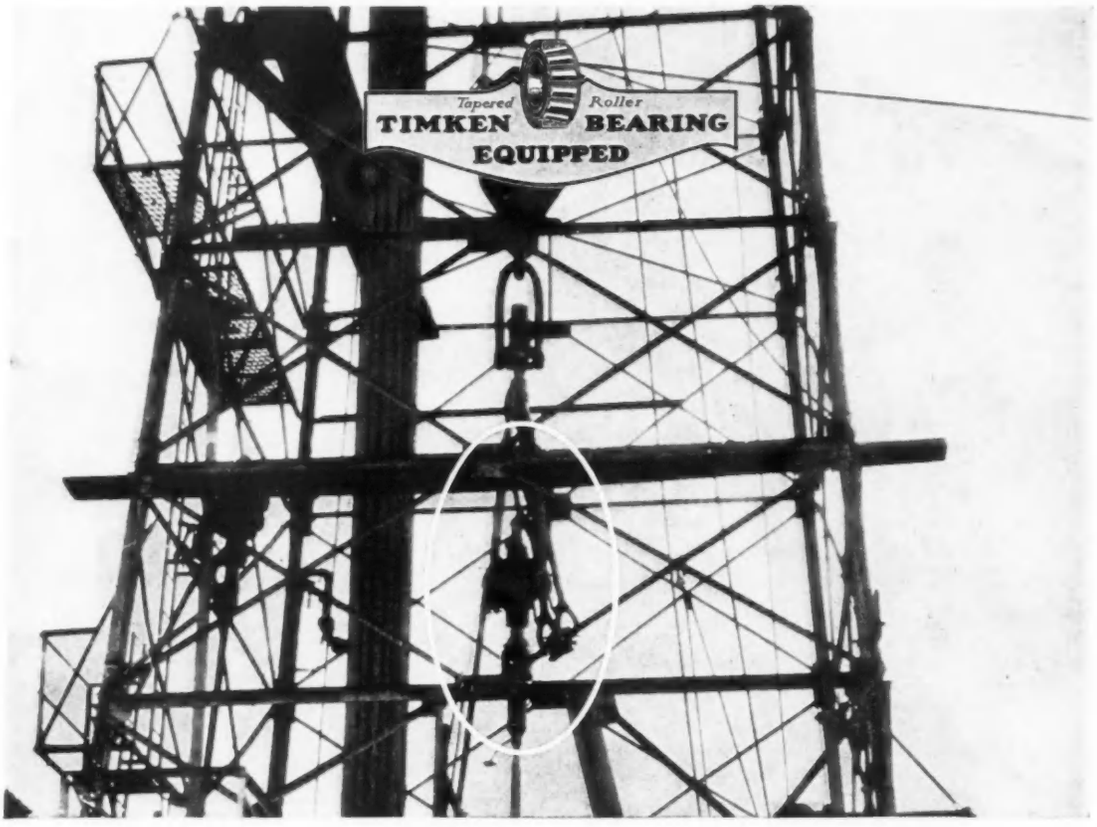

Down 2 miles with Timkens

An "Oilwell" No. 90 rotary swivel [*90 tons capacity*] equipped with Timken main bearings was used in drilling the 10,030 foot well recently completed on the Chanslor-Canfield Midway Oil Company's lease at Seacliff, near Ventura, Calif. The swivel already had a drilling record of more than 200,000 feet of hole...All "Oilwell" swivels, including the No. 150 [*150 tons capacity*] and many other types of oil field equipment manufactured by the Oil Well Supply Company are Timken-equipped for dependability, low operating and maintenance costs and long life. It pays to specify Timken Bearings.

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OCT -5 1931

THE OIL WEEKLY

VOLUME 63, NO. 3 OCTOBER 2, 1931

THE WEEK'S NEWS

Committee Asks Crude Import Curtailment; Refined Embargo

Washington, D. C.—Limitation of imports of crude oil to 140,000 barrels a day during the remainder of the current year and as long thereafter as a stabilization program may be followed in this country, and entire elimination of imports of refined products, was asked by the oil stabilization committee September 25 in recommendations presented to Secretary of Commerce Lamont for submission to the four big importing companies.

It is further suggested that the importing companies who are the principal producers in Mexico and South America be requested to limit production in those areas to a total of not more than 531,000 barrels a day.

Present conditions in the domestic industry, the committee declared, would justify a complete cessation of all oil importations, but it is believed that the program set forth in the recommendations will serve to meet the situation.

While domestic production has been radically cut, it was declared, "there has been no corresponding reduction of imports". Figures were submitted to the secretary showing the trend of imports by the four companies, to substantiate the committee's contention. Standard Oil Company of New Jersey, it was said, last year imported 22,025,687 barrels of oil and during the first six months of this year 10,859,124 barrels, or at the annual rate for 1931 of 21,718,248 barrels. "If this company continues to import at the same rate for the last half of the year as for the first half," it was pointed out, "the total reduction in importations in 1931 over 1930 would be only the nominal amount of 307,419 barrels."

Imports by Shell Union Oil Corporation and Asiatic Petroleum Corporation last year were only 185,000 barrels and for the first eight months this year were 185,544 barrels, or at the annual rate of 278,316 barrels, an increase of a little over 50 per cent. Gasoline imports last year were 8,102,043 barrels and for this year were at the rate of 5,187,525 barrels, a decrease of 35.9 per cent. "Should these companies continue at the same rate of importation for the remainder of the year 1931," the secretary was told, "they will have substantially complied with the understanding regarding importations for 1931."

Imports by Venezuela Gulf Oil Company last year totaled 23,955,754 barrels and for the year 1931 are at the rate of 16,975,708 barrels, a curtailment of 29.5 per cent, but it is expected curtailment will be greater because of greatly reduced imports during August. This company, too, is said to have lived up to the understanding arrived at last spring.

"In view of the great emergency now existing in the domestic oil fields and markets and the serious distress because of unemployment in the oil producing states, we feel we would be justified in asking for an absolute cessation of importations of crude oil, as well as refined oil, in order to emeliorate conditions and restore to the people of those states their former purchasing power now so saidly lacking on account of the demoralized price for crude oil upon which not only the oil industry, but all allied and kindred industries must depend," the committee declared in its recommendations.

"We believe that American capital and labor at home should have first consideration and be protected so far as possible; that it would be little less than a national crime to permit a continuance of the present situation when conditions will be so greatly improved by curtailing importations of oil and utilizing so far as possible our own supply for domestic needs.

"Our recommendations are made to you after a thorough study of the past and present world production figures. We believe the importing companies can, if they will, co-operate in curtailing importations without endangering or seriously injuring their investments. It seems to us that they can as well hold their reserves in South America as in the United States, and by so doing be of great assistance to the oil industry of this country.

"We can only urge that without your good offices curtailment of foreign importations is impossible.

"We believe it only fair to the importing companies to add that a majority of them have displayed a spirit of co-operation and a sympathy for the oil producing states. They have indicated a desire to be of further assistance. Nor do we, with your help, anticipate serious resistance to this curtailment program for imports from those companies which appear at present lacking in the American viewpoint."

The recommendations, submitted by Thurman Hill of the Kansas Public Service Commission, were agreed to by the other members of the committee, Paul A. Walker, Oklahoma Corporation Commission; C. V. Terrell, Texas Railroad Commission; William N. Davis, Mid-Continent Oil & Gas Association, and Wirt Franklin, Independent Petroleum Association of America.

▼ ▼ THE WEEK'S NEWS ▼ ▼

Oklahoma Bankers Seek To Open State's Fields

Tulsa.—The proposition of opening the Oklahoma oil fields now under martial law will be taken under consideration by Governor William H. Murray upon his return from a speaking tour next week. He gave a committee of bankers this answer to their suggestion Tuesday, September 29.

Waite Phillips, Harry H. Rogers and R. Otis McClintock, officials of two Tulsa banks, called upon the governor on their own volition. The three outlined the hardship that is being borne by Oklahoma, which is producing some 200,000 barrels less per day than the 546,000 barrels allotted it in the agreement of governors and conservation officials at Oklahoma City Sept. 11.

Although no promises were given, the three bankers returned hopeful that the martial law orders will be so changed that the Oklahoma output will be raised.

World Oil Conference to Be Sponsored by Institute Body

Tulsa.—Oil producers and business men in mass meeting here Tuesday night, September 29, adopted resolutions approving the action taken by the committees, one of which secured the agreement between officials of Texas, Oklahoma and Kansas concerning oil output as recommended at Oklahoma City September 11, while the other committee laid the need for restricted oil imports before Secretary of the Interior Robert P. Lamont.

Wirt Franklin made reports of the conferences which resulted in the agreement between officials of the three states as well as deliberations in Washington. Mr. Franklin expressed the opinion that the meeting in Austin, Texas, September 18 marked a turn for the better in the oil industry. He said it was the first time that officials of the oil producing states ever had met and considered the oil problem on a scale other than state-wide. He also said that he believed the secretary of the interior would be successful in getting imports reduced and that indications were that a world conference on oil production would be fostered later by the American Petroleum Institute.

Conservation Group Describes Purposes of Its Organization

Fort Worth, Texas.—Texas Oil and Gas Conservation Association, formed at a recent meeting of independent producers, with headquarters here under the direction of Charles F. Roeser, is not strictly an independent producer's organization. It represents royalty, lease and land owners, and has received the endorsement of the majority of the major oil companies operating in Texas.

The association represents the crystallization of the thoughts of these five organizations which joined in forming it: North Texas Oil and Gas Association; East Texas Steering Committee; San Antonio Independent Producers; East Texas Home and Land Owners Association, and the Texas Oil Emergency Committee.

The following constitutes its "six-point program":

1. Stabilization of the oil industry and conservation of petroleum resources through regulation of production to balance supply with current demand and through ratable taking from all producers.

2. Fair treatment for all oil producers and royalty owners, large or small.

3. Fair, equitable and fearless enforcement of all conservation laws.

4. Preservation of the Texas oil industry for the benefit of taxable values, the common school fund and the University of Texas.

5. Maintenance of employment for labor and for the stabilization of business in general through better conditions in the industry.

6. Enactment of adequate conservation laws that will insure the accomplishment of all these purposes.

Texas Solons Prolong Debate On Sabine River Bed Lease

Austin, Texas.—At the urgent request of Governor Sterling, the senate has agreed to remain in Austin through Friday, October 2, in an attempt to pass the Sabine River leasing bill which was filibustered off the floor by Senator Margie Neal, September 28. Considerable difficulty was encountered in the house in its effort to get together a quorum Tuesday afternoon, September 29, to rescind their former resolution to adjourn on that day. The clock was set back till Wednesday morning in an effort to round up enough representatives to permit them to remain in Austin the rest of the week to consider this bill.

The gas hearing held here Monday before the railroad commission, has been continued to Thursday, October 8, and during the interim the commission will consider the rules suggested at the hearing Monday, and also prepare some measures of its own to be considered for adoption after the discussion October 8.

Special rules to enforce the ratable taking of gas and otherwise carry out the provisions of the Pollard pipe line bill in relation to gas production in the Panhandle fields will be taken up at the hearing in Amarillo on Saturday, October 3.

Proposed Oil Marketing Bill Killed by Senate

Austin, Texas.—A brief hearing before the senate committee on state affairs saw the termination of the Oil Producers Marketing Association bill Saturday afternoon, September 26. Prepared by Sam McCorkle, Mexia attorney, and introduced in the senate by Senator Tom Pollard of Tyler, the bill proposed to permit the organization of 25 or more producers into a marketing association to pool their oil for sale. It also prohibited the membership of any corporation whose capital stock exceeds $2,000,000.

The bill was placed before the state affairs committee Saturday afternoon and when the vote was taken the bill was killed by a vote of nine to three.

Sam McCorkle, proponent of the measure, representing J. K. Hughes and E. L. Smith, admitted that the purpose of the measure was to permit the producers to do something that could not be done under the present anti-trust laws, and to get a better price for their oil.

Dan Moody, appearing for Harrison Abercrombie Company of Houston, opposed the measure as being a violation of the anti-trust acts and discriminatory. He cited several cases to prove that such laws have been held invalid in other states.

East Texas Field Problems Considered at Lufkin Meeting

Lufkin, Texas.—Because the East Texas field is monopolizing the efforts of many engineers it was decided that the fall meeting of the southwest district of the American Petroleum Institute division of production would be held here in proximity to the field, and for the same reason four of the six papers on the program were devoted to subjects involving the big field. The meeting was held in Lufkin September 24 and 25, and it was unanimously adjudged to be one of the most successful meetings ever held by the group, both as to the papers presented and the hospitable reception and hearty welcome extended by the business people and citizens of Lufkin. Over 160 persons registered for the meeting.

Expressing the hope that the group would again meet in Lufkin, the local chamber of commerce arranged a particularly commendable program for the pleasure of the visitors, who commented generally upon the generous hospitality. In expression of their appreciation the oil men at the close of the meeting adopted a resolution commenting upon the "unusually fine facilities and accommodations," and upon the "extraordinary fine entertainment" which the various business firms and civic organizations of Lufkin had provided.

The business meetings of the American Petroleum Institute body were held in the air-cooled Pines Theatre, located within a short distance of the Angelina, Bonner, and Mahaffey hotels, in which the visitors had registered, and the business program was launched Thursday morning, September 24. At the conclusion of the morning session, at which two papers on welding were read and commented upon, the group was transported in courtesy cars to Lufkin Foundry & Machine Company's plant. Upon arrival there a photograph of the group was made by a photographer representing THE OIL WEEKLY, which before final adjournment on the following day presented those in the picture with complimentary copies of it. The visitors then enjoyed a Dutch lunch which the Lufkin Foundry & Machine Company had provided on its grounds, and the lunch was followed by a tour of inspection through the large foundry and oil field equipment manufacturing plant of that company.

Thursday afternoon two papers were presented dealing with production and drilling practices in the East Texas field, and at 7 p.m. the convention was entertained by the Lufkin chamber of commerce at an informal and generally enjoyed banquet in the ball room of the Hotel Angelina, with John S. Redditt, president of the chamber of commerce presiding, and John S. Bonner of Houston, vice president of Humble Oil & Refining Company, and former townsman of Lufkin, serving ably as toastmaster. Following the banquet there was presented at the Pines Theatre through courtesy of the United States Bureau of Mines and the American Petroleum Institute the interesting film, "The Story of Petroleum," showing the many operations involved in discovering, producing, refining, and marketing petroleum.

On Friday morning there were two papers dealing with oil well fires in East Texas, and safety measures which are being taken or which should be taken. The usual question box feature was the final item on the business program, and after final adjournment of the group there was an inspection of the plants of the Angelina County Lumber Company and Martin Wagon Company, which make materials used in oil field work. The visitors were then the guests of the Angelina County Lumber Company at a Dutch lunch at Lake Myriad Country Club. Following the luncheon there was staged for the entertainment of the visitors a "badger fight," after which those interested in golf were afforded the opportunity to play.

High-Lights of Presentation and Discussion of Papers at Lufkin Meeting of American Petroleum Institute

1. "Developments in Arc Welding as Applied to the Oil Industry," by J. C. Lincoln, Lincoln Electric Company, Cleveland, Ohio. Mr. Lincoln was unable to attend the Lufkin meeting, and his paper was read for him by C. K. Rickel, Big Three Welding Equipment Company, Fort Worth, Texas. This was the first paper on the program, and it proved of considerable interest among those present. It described improvements in arc welding and showed application to pipe line construction, to welding of tank roofs and bottoms, and to repair of existing lines.

In discussion following reading of the paper it was stressed by Mr. Rickel that welds made with the modern shielded arc are highly resistant to corrosion and are tough instead of being brittle like the welds formerly obtained with the electric arc from which the atmosphere was not excluded.

In answer to a question by John A. Ritter, Sun Oil Company, as to how high the weld should be built up in construction of a pipe line, it was stated by Mr. Rickel that the weld should be as narrow as possible and should not extend beyond the outer wall of the pipe, as additional building up of the bead would not add to its strength but only to its mass.

Asked by E. Stanley Durward, Shell Petroleum Corporation, as to whether more skill is needed for acetylene welding or electric arc welding, the speaker replied that electric welding probably requires less skill, as it is more or less "fool proof," the electric welder ordinarily making a good weld in spite of inexperience or adverse conditions.

G. Raymond, Black, Sivalls & Bryson, Incorporated, discussed some interesting facts with regard to the progress which has been made, and the recognition of merit which has been gained by the electric process of welding, and for the inspection of those in the audience he handed out coupons demonstrating the durability and toughness of welds made by that method. Others who manifested interest in electric welding by joining in the discussion included G. B. Corless of Humble Oil & Refining Company and W. C. Kinsolving of Sun Pipe Line Company.

(*Continued on page 65*)

Correct and Incorrect Producing Practices in East Texas

By BLAINE JOHNSTON
Vice-President, Simms Oil Company, Dallas, Texas

GOOD practice in the production of oil eliminates unnecessary waste both underground and above-ground; good practice reduces to a minimum those hazards that often result in uncontrolled wells and costly fires; good practice utilizes that equipment and procedure which will effect the greatest possible recovery of oil and gas, and the thoughtful and conscientious operator who habitually seeks to improve his production methods and to conserve equipment is a real asset to the field in which he operates and to the industry as a whole.

The new East Texas fields have brought among us many operators unfamiliar with the oil business who have indulged in careless and dangerous drilling and producing practices. A mistaken idea of economy has influenced others to do likewise. Stock should be taken of the situation, however, and an endeavor made, wherever possible, to correct it. It may develop that initial economy will be the most expensive in the long run. A few of the principal operations are discussed in this paper, for the purpose of eliciting discussion, in the hope that better practices will result.

This paper is sponsored by the Southwest District Committee on Production Practice and was presented before the September 24-25, 1931, meeting of the Southwest District of the American Petroleum Institute Division of production, Lufkin, Texas.

Incorrect Practices

EVERY known type of well hook-up exists in the East Texas field, there being many different methods used for the bringing in of wells. In same instances the operator apparently has but one desire, and that is to get the well in as soon as the valves are installed, giving little heed to what could happen.

After the cement has set and the cement plug ready to drill, it is common practice to cut the casing and clamp up, or set the casing collar on the bradenhead. This is usually done by cutting the pipe to the required length and welding back together, taking a strain on casing and anchoring it. When so welded, a strain should never be taken on casing by taking the stretch out as weld is easily cracked, which will not show a leak until hot oil is flowing through the casing under pressure.

Practically every well in the East Texas field is flowing through tubing, which is suspended from some type of tubing flow head.

In bringing in a well, water is pumped either through the tubing or casing, washing all heavy mud from the well. After complete return of the clear water, the well sometimes kicks itself in. The water, oil and gas is then flowed into the slush pit near the derrick and usually near the battery of boilers. This is bad practice because the high gravity of the oil and the high gasoline content of the gas produces a great fire hazard and a burning well is always a most serious problem.

In some instances it is necessary to swab a well in order to get it to flow. In many cases it will then flow without the aid of swab; and sometimes is allowed to clean itself through the top of the derrick. This is bad practice. Some operators use about 50 feet of pipe connected to the top valve of the Christmas tree. This permits the flow to pass out through the opening below instead of up through the derrick. When the swab is pulled up into the pipe above the valve, the valve is then closed, leaving the swab in the pipe above, and the flow is then turned into pit or flow tanks. This is bad practice, as oftimes the swab is blown out of the hole, coiling the swab line on the derrick floor. If the swab line should coil in the 50-foot casing extension and be overtaken by the swab and bridge, the valve could not be closed and a fire hazard will result as well as loss of production.

Correct Practices

When a tubing head and valves are installed on a well, each and every valve should be inspected, and every nut tightened, and all valve stems repacked or inspected regardless of whether valves are old or new.

A flow line should be connected to the well connections and laid to a pit of sufficient size to hold the amount of fluid necessary to clean the well. This pit should be at least 100 feet from the well, out in the open, where the oil can be burned at leisure without danger to tanks or well.

After the well is completed as a producer, a pipe line should be laid out on the lease 100 feet from well and connected just below the ground, at the well's six-inch casing by a four-inch gate with a heavy check valve ahead of gate valve, installed so the well pressure will be against the check valve to hold the flow. In this manner the four-inch valve will be left wide open at all times and if at any time the tubing head connections should be broken off during a storm or hit by lightning and set on fire, a small pump can be connected to the end of dead line without danger and water pumped down through the casing and up through the tubing, thereby killing the well and at the same time extinguishing the blaze. There is usually enough pipe around on the lease for this purpose and this simple preventative can be installed at very little expense.

If this practice had been followed on wells on which the derricks were recently blown down, it would have eliminated the loss of production, possibility of disastrous fires as well as much mental strain on the operator and oil owner.

When swabbing a well, the correct or safe practice is to listen to the fluid level after each run of the swab. This can be done by dropping a pebble and timing the interval required for the pebble to hit the fluid. If this

SUMMARY OF RECOMMENDED GOOD PRACTICES FOR EAST TEXAS

1. Every flowing well should have a permanent line with a back pressure valve installed just ahead of gate valve, so that the well pressure will keep it closed. This line should extend a safe distance from well at least 100 feet. If connections should be broken off and well get wild, or catch fire, a pump can be attached to line and water circulated through casing, killing well and at the same time extinguishing the blaze.

2. All gate valves, stuffing boxes, etc., should be gone over with a wrench, all nuts tightened and thoroughly inspected before swabbing of well begins. This is important for either second hand or new valves.

3. Flow line from the Christmas tree to a pit of sufficient size to hold the fluid necessary to clean the well should be laid a safe distance at least 100 feet from well and boilers. This eliminates danger of fire and keeps the rig clean of oil and mud.

4. After well is completed as a producer, wood derricks should be dismantled. If necessary to leave them as pumping derricks, the floor should be removed, cellar filled with dirt and all flow lines should be put underneath the derrick sill. This prevents breaking of connections if the derrick should blow down. All debris should be removed, the ground smoothed, the lower well fittings covered with earth, all other connections protected with guard rails and grass and weeds kept away from within 50 feet of the well.

5. All tanks should be equipped with vent lines to carry off vapors to a safe distance from tanks or buildings.

6. Walkways for stock tank should be erected alongside of tank as a protection for pumpers and gaugers from gas.

7. Sucker rods should be suspended from rod hanger in derrick. In this manner they are kept straight with no chance of kinking and it also keeps them free from grit and dirt.

8. Pressure gauges should never be installed on Christmas tree until after the well is thoroughly cleaned. The majority of gauges on wells in East Texas do not register correctly on account of being filled with drilling mud while washing well.

interval decreases, it indicates that the fluid is rising and that the well will flow under its own pressure. When it is impossible to hear the pebble strike the fluid, the fluid level can be determined by running the swab and if the fluid level is rising, remove and discontinue swabbing, close the top gate and divert flow to lead lines.

Pumping Equipment for East Texas

Every operator in East Texas today is wondering what is the most practical pumping unit to use. There are many units that are practical, in fact, all units manufactured today are good.

There are many operators who have second hand pumping units and standard rigs in other districts which may be transferred and many dollars saved. However, the most of this equipment is rather light for East Texas requirements. No one can be censured for this move as the 4½-inch units and rig irons and 25/30 engine and motor will give satisfactory service as long as clean oil and gas is produced. After water enters the field it is almost certain that six-inch rig irons or units as well as 40 hp. prime movers will be needed. Therefore, careful consideration should be given to size when purchasing new equipment.

The next important question is to determine the kind of energy that is the most reliable and economical for the life of the field. It is well to bear in mind the history of the Woodbine sand in the Mexia district. The gas from these wells was short lived, even before water entered, and the gas was not sufficient to furnish fuel for the leases in most cases. In buying gas engines to operate a lease, it will be using good judgment to include a combination crude oil head. This will solve the fuel problem later on very economically.

There will be many electric motors used. They are considered one of the best prime movers for pumping purposes, so far as the wear and tear on pumping equipment is concerned, and if the power rate is right, is an ideal way to produce oil. However, there is considerable danger even using electricity if located where escaping gas can come in contact with motor or switches. This may be true to a certain extent on gas or oil engines.

All tubing placed in wells for flowing purposes is spaced from 50 to 200 feet from bottom of well. Under this practice the drilling mud, containing sand and shale, is left in the bottom of the hole and if the well is not bailed or sand-pumped before putting on beam this mud must be pumped out with tubing and rods. Under this condition a plunger type barrel should be used; after a few days pumping there is a possibility of plain barrels giving splendid results.

It is common practice with almost all operators to take up four-inch flow lines after a well has stopped flowing and replace them with two-inch or 2½-inch lead lines. From an economical operating standpoint it is much bettter to leave the four-inch line to pump through, as it will not put as much pressure on the tubing as a smaller line. The difference in labor in making the change will offset the difference in saving of salvage pipe.

The pumping period in the East Texas field will last much longer than some people think, therefore, it is wise to purchase good substantial equipment at the beginning while the production is high, then later on when the production is low the lifting cost will also be low because of low replacement costs. It is just as cheap to buy standard A. P. I. equipment that will interchange with future purchases—saving in time and money to all concerned.

Chemical Treatment for Paraffin

With the coming of cold weather and as more wells are put to pumping, the trouble from the deposit of paraffin will no doubt increase greatly. The chemical treatment for the prevention of this paraffin deposit has been very successful in other fields, and might prove to be so in this field also.

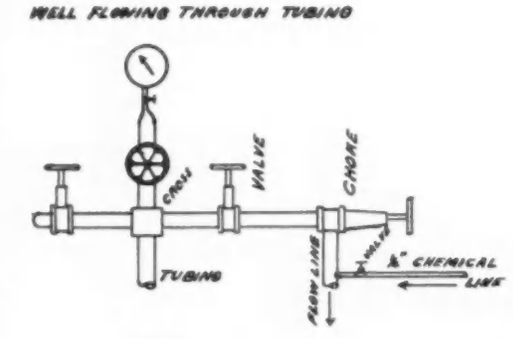
A hook-up for this chemical treatment is shown in Figure 1.

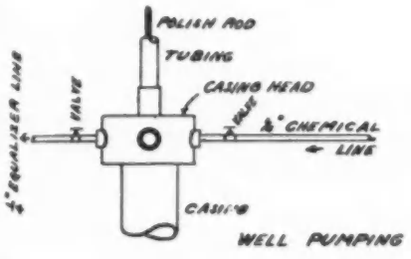
For the pumping well, the chemical is introduced into the casinghead of the well and passes through the annular space between the casing and tubing to the bottom of the tubing, where, intimately mixed with the oil, it is pumped out through the tubing. If the tubing or flow line is already badly paraffined when the chemical is introduced, the paraffin is loosened and pumped out in small chunks. Thereafter while the chemical is being used, it keeps the paraffin from forming and the tubing and lines clear.

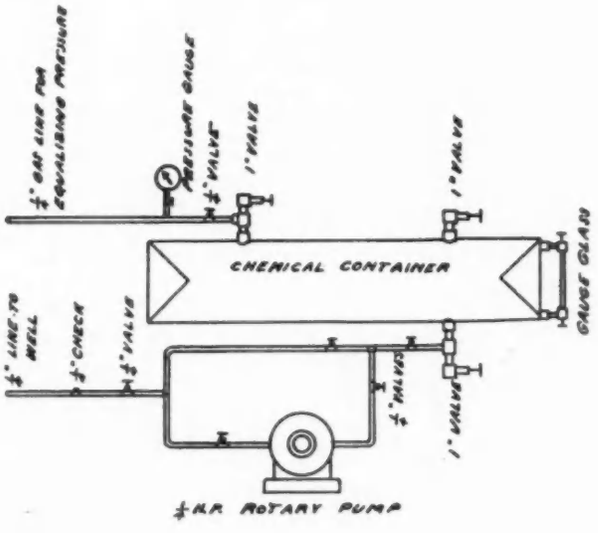
To the right of the sketch is shown a hook-up for the chemical drum. Where the chemical is not to be put in against pressure, the chemical container can be made of almost any light material. Where it is to be introduced against pressure, a pup joint of old casing about seven or eight feet long, with ends and outlet collars welded as shown on the sketch, makes a satisfactory container. To the left at the top of the container is shown an equalizer line, which can be connected either to the pumping well's casinghead or to an outside pressure source to equalize or

FIGURE 1.

SKETCH OF HOOK-UPS FOR CHEMICAL TREATMENT FOR PARAFFIN







CHEMICAL DRUM HOOK-UP

increase the pressure in the container if the chemical is being introduced against pressure, so that it will not have to buck this pressure. The outlet from the container is shown manifolded so that it can be used either as a lubricator or forced in by a small ¼ hp. rotary pump if electricity is available at the well. The pump method makes a satisfactory way of introducing the chemical as it can be regulated to the desired amount and makes a positive source regardless of changing weather conditions.

Because of the temperature of the oil and the back pressure held on the wells, flowing wells will probably not be troubled by paraffin in the tubing. However, if they should paraffin up in the flow line between the choke and the tank where a large part of the pressure may be released, the chemical could be put into the flow line just after the choke, as shown on the sketch. If the tubing should paraffin in a well flowing through the tubing, a small size of tubing can be run inside the flow tubing to a depth below that at which the paraffin forms. The chemical can then be forced down through this smaller tubing to mix with the oil and flow up through the large tubing keeping it clear from paraffin.

Improper Tank Battery Hook-up

Figure 2 shows an improper tank battery hook-up. This hook up dates back to the early days of production and is still used by a number of operators in the East Texas fields. This is bad production practice.

Note the open hatches and openings around the edge of the roof that allow the gas to flow about the vicinity of tank. This is a fire hazard and robs the oil of its highest gravity. Also notice the walk-way between tanks. This does not extend across the top of tanks, and if it did it would not be of any assistance to a gauger who might become asphyxiated and fall with his head in the escaping gas and probably die before aid could reach him or he might fall off of the tanks to the ground.

The risers or flow lines from separators or wells are not connected with a flange in the top of the tank, but a nipple is merely inserted through the hatch hole. This is bad practice for the reason that it splashes the oil and gas over the deck of tank and does not permit visibility of the flow.

The bleeders for drawing off b.s. and water from the bottom of tanks are allowed to drain into a sump hole and later picked up by a pump and retreated. This is waste and is a fire hazard—and causes what is commonly called "bad housekeeping." Note Figure 3 for a better system.

The cost for a tank set-up of this kind is just about as expensive in dollars and cents as the cost of a modern up-to-date tank hook-up.

Improved Tank Hook-up

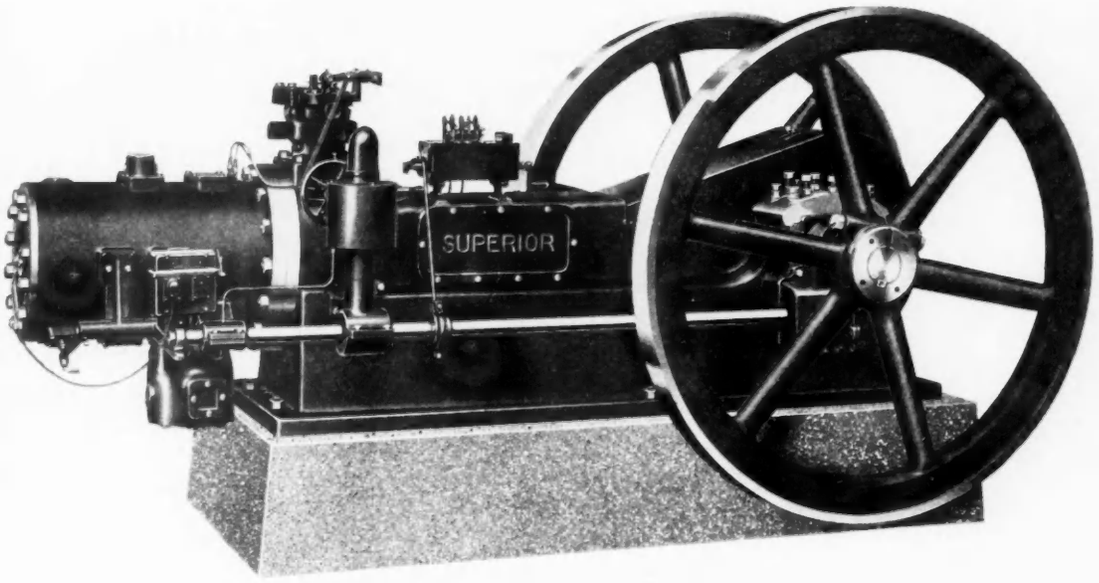
Figure 3 illustrates what is considered a proper tank hook-up. Other batteries are used, different in construction and design, with pipe connections, vent lines, etc., installed differently to suit the idea of the engineer or superintendent, but the principle is the same. Safety and economy is evident in a tank set-up if the general design shown in Figure 3 is followed.

Note the four-inch vent line running from the top of the center hatch to a point some hundred feet away from the tanks. A bull-headed tee diverts this line upwards and a safety screen is placed in the riser. The horizontal line is sloped

SUPERIOR

IMPROVED.. 40 H.P. TWO CYCLE

GAS ENGINE

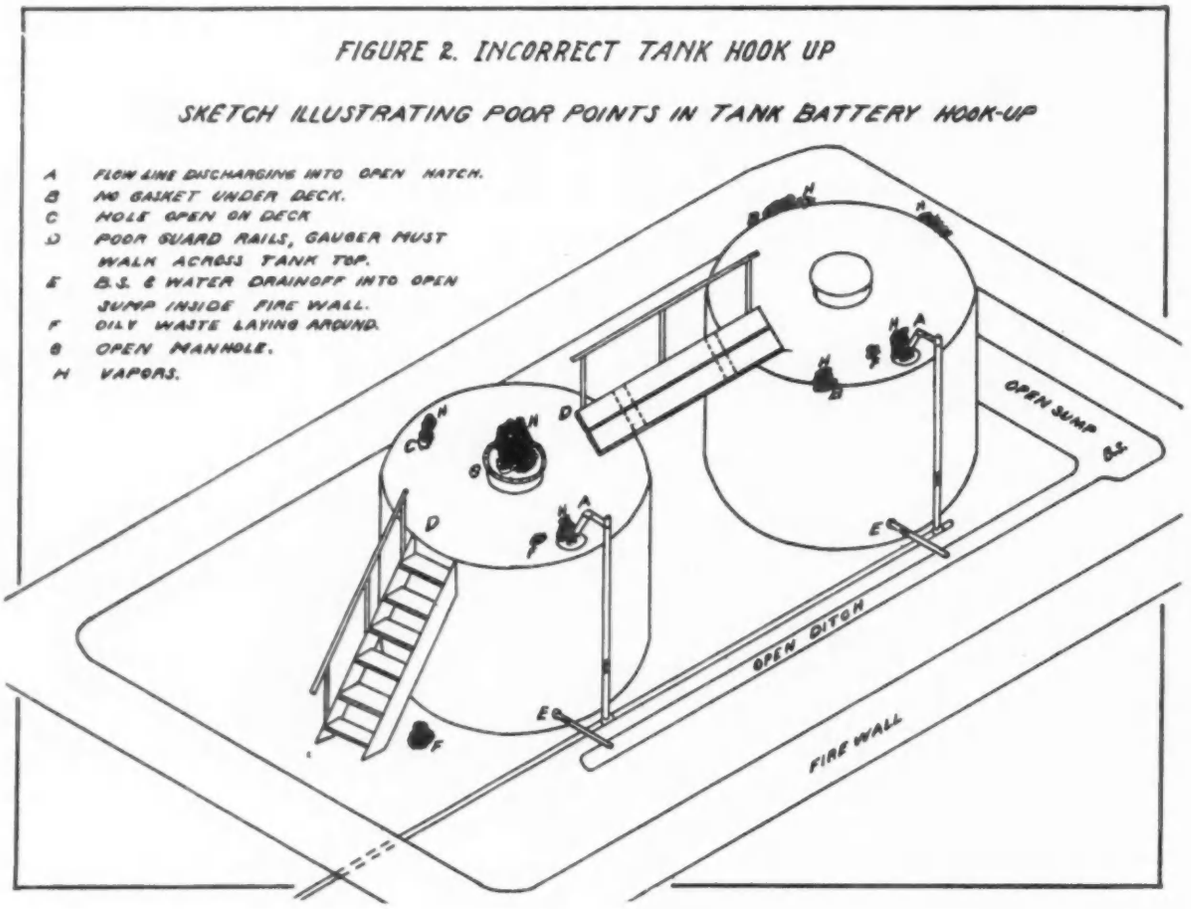


For beam pumping of wells up to 5000 feet in depth, and for swabbing and hoisting operations on wells up to 4300 feet.

THE NATIONAL SUPPLY COMPANIES

FIGURE 2. INCORRECT TANK HOOK UP

SKETCH ILLUSTRATING POOR POINTS IN TANK BATTERY HOOK-UP


A FLOW LINE DISCHARGING INTO OPEN HATCH.
B NO GASKET UNDER DECK.
C HOLE OPEN ON DECK
D POOR GUARD RAILS, GAUGER MUST WALK ACROSS TANK TOP.
E B.S. & WATER DRAINOFF INTO OPEN SUMP INSIDE FIRE WALL.
F OILY WASTE LAYING AROUND.
G OPEN MANHOLE.
H VAPORS.
OPEN SUMP B.S.
OPEN DITCH
FIRE WALL

towards the tank so that any condensation will drain back into the tank. This permits the burning of the tank vapors at the top of the riser with safety.

It is necessary to conduct the vapors away from the tank battery because it is hazardous to let the vapors, as such, escape into the atmosphere. The vapors being heavier than air fall to the low places and are apt to be ignited, causing loss of life and property. The function of the safety screen is to prevent propagation of flame from the torch back through the line to the tank in case a mixture of air and tank vapors are in such proportion as to be combustible. This can easily happen when a tank is pumped out and air enters the tank to displace the oil. The suggestion that the tank vapor line be connected to the trap vapor line so that in case of a tank drawing in air while pumping out will take gas from the trap line instead, thereby preventing a formation of a combustible air and gas mixture, is not feasible since often the tanks are being pumped out when no production is running into the trap, in which case air enters the tank as before.

This flame arrestor is made with two 4x6-inch swedges connected with a six-inch flange union. Inserted between the flanges are three layers of 30-inch miner's copper gauze separated by one-eighth-inch asbestos gaskets.

Past experiences with wire screen flame arrestors inside of pipes have not always been satisfactory but in experiments with this safety screen, or flame arrestor, it was observed that ordinarily an air and gas mixture will travel back as far as the copper gauze where the temperature is reduced by the rapid conduction of heat by the copper gauze, below the ignition point and the flame goes out. However, it was found that in a critical air and gas mixture the flame will burn in the first layer of the copper screen until it gets red hot in the center. It was left to burn at this point for 30 minutes, but in no case did the flame get to the other side of the screen. Even with this flame arrestor installed, explosive mixtures in stock tanks should be avoided by excluding air and keeping the vapors too rich to burn. How this can be done practically is a question. Suggestions on this point are invited. The plug in the bottom of the bull headed tee permits the line and flame arrestor to be cleaned in case of scale accumulation.

Walkways

The walk is located along the side of tank about three feet from the top and extends the entire length of tank battery. It is not necessary for a gauger to go on top of the tank, and if he should become asphyxiated and fall while thieving or gauging through the hatch, he would naturally fall on the walk away from the gauge hatch and out in the open air.

Riser From Flow Line

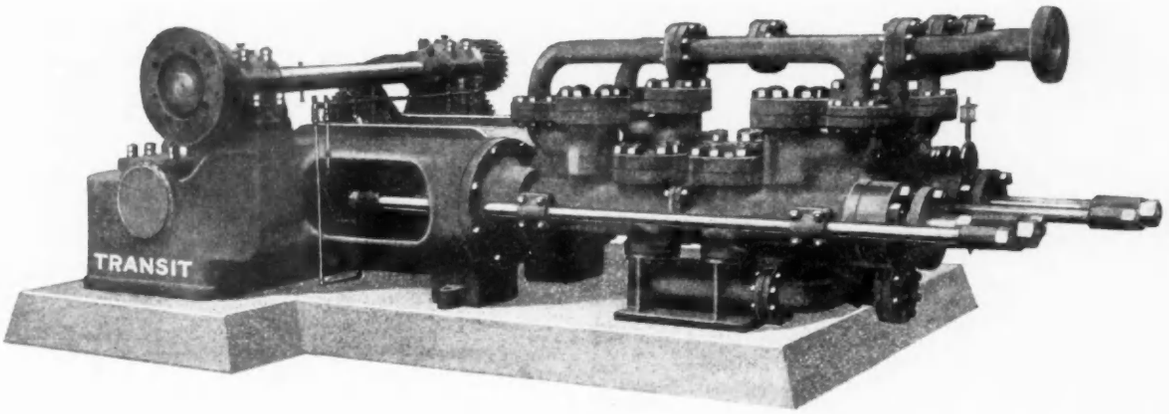
The riser or flow line from separator or well is connected through a flange on the side of tank just under the edge of roof with a hatch hole six inches from the flow pipe. Tanks can be gauged without the gauge tape being covered with oil from the flow, and stream of fluid can be seen without soiling the top of tanks.

B. S. and W. Bleeders

A pump of any convenient size is set alongside the tanks. All bleeder or draw-off lines are connected into the suction. When it is necessary to draw off b.s. and water, the pump

(*Continued on page* 43)

A SPECIALIST
built IN EVERY DETAIL— *to handle its own* TOUGH JOB



PIPE Lines have enough trouble these days without paying too much for pumps, or buying pumps not exactly suited to their work. The Texas Type power pump illustrated above is regarded very highly by many experienced pipe line men because it overcomes so many of the little annoyances found in pumps less adapted to pipe line work.

STRENGTH is there by reason of correct design, and not by a preponderance of unnecessary metal.

ACCESSIBILITY is well taken care of in the design and is further enhanced by extreme simplicity.

DURABILITY too has been attained by large bearing surfaces, broad faced gears and deep plunger stuffing boxes, made especially long, to minimize packing pressure on plungers.

The fluid pumped travels through short direct passages of liberal area, and of easy turns and bends in a natural way without the objectionable "churning" so often experienced with ill adapted pumps.

Our line of pumps is complete for either light or heavy pipe line service. A letter from you describing your conditions will bring our recommendations, or if you prefer we will send an engineer to go over your conditions.

REFINERY PUMPS FOR HOT OIL and many other refinery service
TRANSIT (DUPLEX) ROTARY PUMPS
PIPE LINE PUMPS

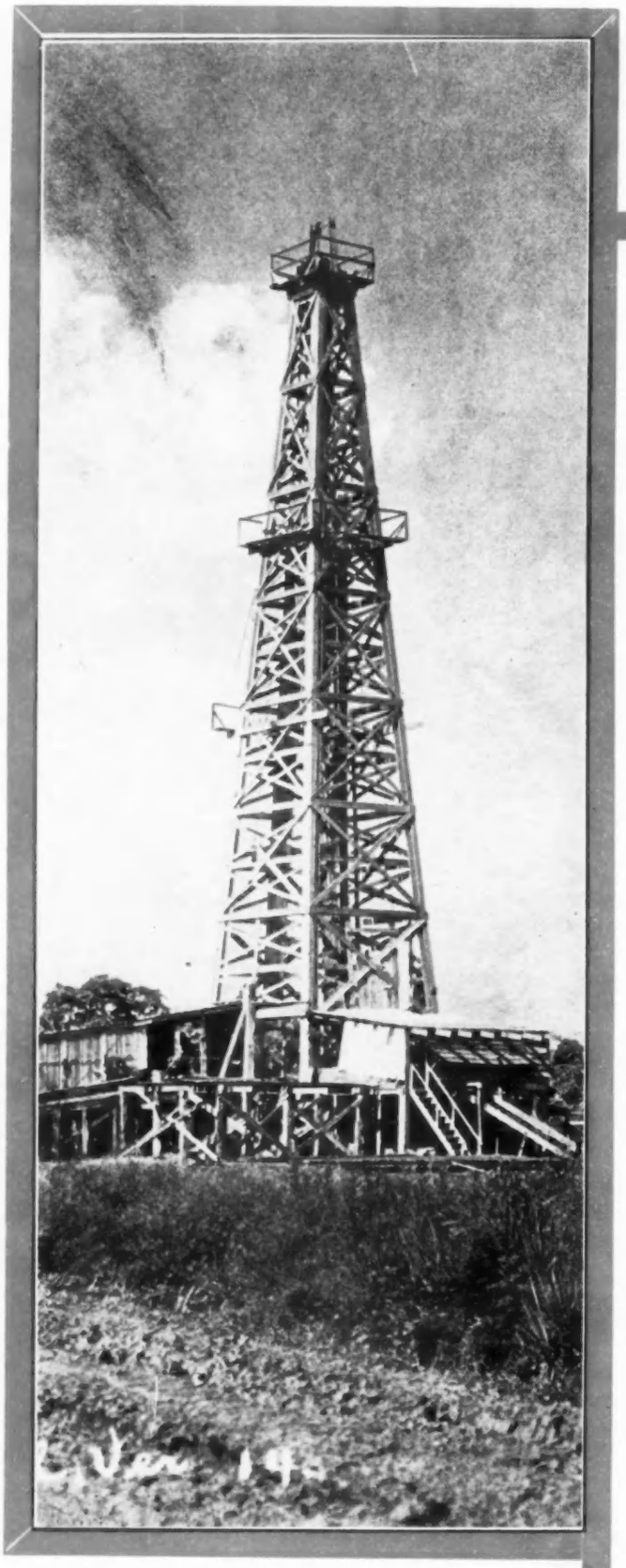
BEAUMONT, TEXAS
E. L. Wilson Hardware Company
SALT LAKE CITY, UTAH
F. C. Richmond Machinery Co.

NATIONAL TRANSIT PUMP & MACHINE CO.
OIL CITY, PA.

PHOENIX, ARIZ.
Pratt-Gilbert Co.
LOS ANGELES
Republic Supply Company of California
ST. LOUIS, MO.
Reeves & Skinner Machinery Co.

NEW YORK PHILADELPHIA CLEVELAND PITTSBURGH LOS ANGELES HOUSTON TULSA NEW ORLEANS

FIELD PUMPS
TOOLS
for Pipe Line Construction
GAS ENGINES
GAS ENGINE GAS COMPRESSORS



Penn Mex Fuel Company's Jardin 35, located in Vera Cruz, Mexico, on the Golden Lane structure of the San Diego escarpment, is the deepest well in the world today.

WORLD'S DEEPEST WELL

HISTORY

Penn Mex Fuel Company spudded Jardin 35 early in 1930.

Purpose of test was to explore below accepted producing horizon of Golden Lane structure, located near the top of the Tamasopa lime. There was no idea of establishing a world's record.

On February 24, 1930, a string of 22-inch casing 190 feet long was set in the 25-inch cable tool drilled hole.

On May 21 the 16-inch cementing job at 2236 feet was pronounced a success. August 27, 2732 feet of 13⅜-inch was cemented at 2732 feet, and on March 11, 1931 the unusually long string of 9⅝-inch casing was cemented at 5200 feet.

From 5200 feet to bottom at 10,585 feet was open hole.

Drilling was finished August 30, 1931, and Jardin 35 is shut down at this writing, waiting orders from headquarters in Pittsburgh.

ENGINEERING SIDE LIGHTS

Reverse circulation used on Jardin 35 was effective in raising lime cuttings, keeping hole clean and reducing coring.

* * *

Derrick floor raised 36 feet from bottom of cellar to provide clearance for handling special equipment.

* * *

Much of the drilling was done without the use of mud even when pressures were the greatest.

* * *

Three "pup" joints had to be snubbed down as drilling progressed before a single joint of drill pipe could be added to the stem.

* * *

As high as 300,000 barrels of hot salt water per day had to be handled.

* * *

Obnoxious gas at great pressures had to be handled.

Two Miles Deep

[Being an explanation of methods used in drilling to 10,585 feet in Penn Mex Fuel Company's Jardin 35, deep test of the Tamasopo lime]

By Wm. V. GROSS
Staff Representative

RECORDS of achievement are shattered and replaced rapidly by new records in this era of technical progress. Rarely do we find a "world's record" in any field of industrial endeavor with more than an ephemeral span of life. But when we do, there is something to talk about. The hows and whys of the manner of establishing such a record, when properly presented and disseminated, constitute a working basis for greater accomplishment. Therefore, it is with the specific purpose of making a distinct contribution to deep well drilling technique that this article is presented.

When George W. Crawford, president of Penn Mex Fuel Company, from his Pittsburgh office authorized the drilling of Jardin 35 in Mexico he did so with the idea of testing the Tamasopa lime—not with the idea of sanctioning the beginning of what has turned out to be not only the world's deepest well but also a stupendous accomplishment of modern drilling technique. The world record established was merely incidental to the task of satisfying his desire to explore below the accepted producing horizon of the "Golden Lane" in Vera Cruz. "Golden Lane," San Diego Escarpment, extends from Lake Tamuiahua near San Diego and at the famous Dos Bocas crater, with minor breaks into the Haciendo San Isidro near Los Canas, 16 kilometers south of the Tuxpam River. It is a narrow crescent 120 kilometers in length. "Golden Lane" structure gave a large amount of post war production from the top of the Tamasopa lime, Cretaccous, at an average sub-sea depth of 2000 feet, just above the salt water zone.

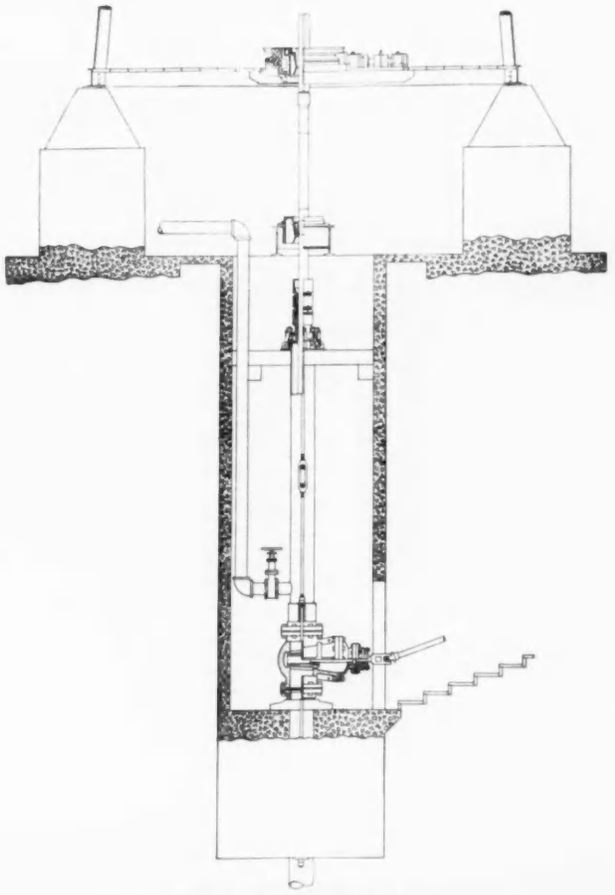
Pressure

Drilling to a depth of better than two miles in Mexico—away from supply houses, away from consulting engineers, handling obnoxious gases and pressures and volumes of hot salt water varying daily from 50,000 to 100,000 barrels, was indeed a feat. It was a task that not only required the very best of available equipment but was a constant drain on the mental resourcefulness and ingenuity of those directing, particularly J. M. Reardon, general manager, and George Fertner, drilling superintendent.

All drilling, after the 2350-foot level was passed, was done through stuffing boxes to hold back the water and gas. The drill pipe had to be snubbed in and out of the hole on account of the pressure, pressure so great that once it broke the snubbing lines down, blowing the drill pipe out of the hole. The water stream following the pipe out of the hole caught the tool dresser with full force, blowing him out of the derrick 85 feet up into the air and killing him. This tragic incident illustrates graphically conditions of pressure coped with in drilling Jardin 35.

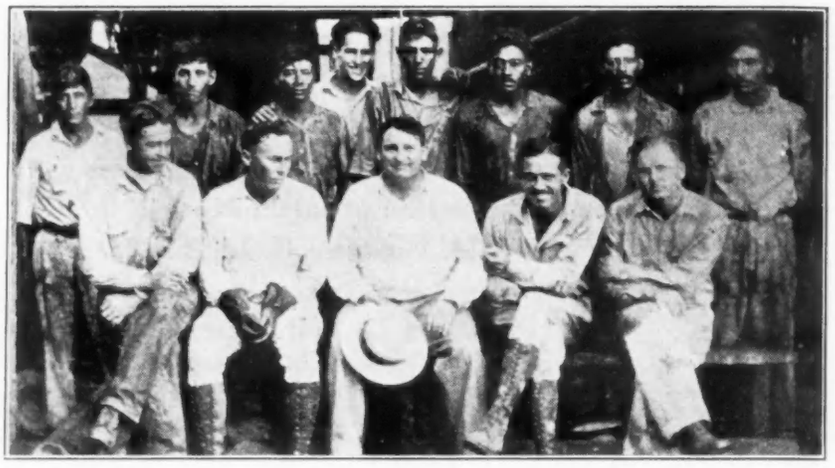
The story of Jardin 35 really starts with setting 16-inch casing at 2236 feet. Up to this time conventional methods were employed in drilling, methods similar to those ordinarily used there in drilling a large diameter hole in hard sand rock and soft shale, (San Felipe). The progress was slow due only to the hardness of the formation. It was necessary to run a fish tail bit most of the time, changing to a Hughes rock bit when hard strata, such as shells, were encountered. Shut-down time from spudding date to setting 16-inch casing was negligible.

One unusual feature of the drilling layout for Jardin 35 was the arrangement of the derrick and cellar. A combination rig was installed in a 26-foot square base wooden derrick 122 feet high. The derrick rested on six by six foot concrete base corners which rested on four 10 by 10 by 3-foot concrete mats. The base corners were nine feet high. The cellar, with reinforced concrete walls 14 inches thick, measured nine by nine feet on the inside and was 25 feet deep, from the ground. Thus there was a working



Derrick Floor and Cellar

SOME OF THE MEN WHO TURNED THE TRICK



space of 36 feet from the derrick floor to cellar floor, considering the sill clearance.

The accompanying drawing shows the arrangement of derrick and cellar. Particular attention is called to the special large I-beam spider located at the ground level of the cellar. This spider is supported on the concrete side walls and is arranged to carry the same split master rotary bushing as the National Supply Company "Ideal 10-24" Universal Rotary. Thus the slips are interchangeable in the rotary on derrick floor and the special spider beneath the floor. The split master bushing permits using the full opening of the spider when this is desired for removing stuffing box or other equipment.

It will also be noted in the drawing that the stuffing box is supported on a cross member platform. The stuffing box is thus rigidly supported and braced to withstand the whipping of the drill pipe which has been found detrimental in previous similar installations.

The cellar floor on Jardin 35 was made up of a cement anchor block 12 feet square and seven feet thick. In this block were embedded eight 2½-inch diameter eye-topped tie bolts anchored with steel plates at their lower ends in the base of the cement block. A timbered tunnel, four feet wide and seven feet high, extended from the floor of the cellar to the surface of the earth at a point 100 feet removed from the rig on the side opposite the draw works. The tunnel was covered with old tank steel. This type of tunnel was given preference over the usual type of wooden runway because of the danger of settling corners with such a cellar depth and because it afforded better protection for the valve stem extension rods and flood and snuff lines in the event of fire. Before entering the cellar to work, members of the crew clarified the atmosphere therein by turning on an eight-inch steam jet similar to those fitted on casing heads at Borger, Texas, where there is also danger from coming in contact with gas.

Unique Mud Pit Arrangement

On the bull wheel side of Jardin 35 the arrangement of mud pits was unique. Adjacent to the mud pumps was the usual 20 by 20 by six foot slush pit. Then followed a six foot stretch of solid earth at the outer edge of the slush pit, separating it from a settling pit 20 by 70 by five feet. Then another six-foot barrier of unbroken earth separated this latter pit from a larger settling pit which measured 18 by 180 by five feet. The two settling pits were connected with each other and with the slush pit by means of water tight sluice gates transversing the solid earth barriers. These sluice gates were similar to those seen in irrigation ditches. Flanking the larger settling pit, one on each side of it, were two reserve pits, each measuring 200 by 200 by four feet. A complete and elaborate system of steam jets, or shotguns, was installed to facilitate movement of the mud in any direction needed and to help expel the vast quantities of salt water which had to be handled. This arrangement left considerable distance between the outer end of the last settling pit and the derrick floor. As will be explained hereafter, this was an effective precautionary move with reference to handling the gas and steam issuing with the returns. (Incidentally, it was of casual interest to note that all other wells on Penn Mex Fuel Company's lease depended upon central mud lines for replenishment of reserve mud pits—a system long used at Ventura Avenue field in California.)

Mud Mixers

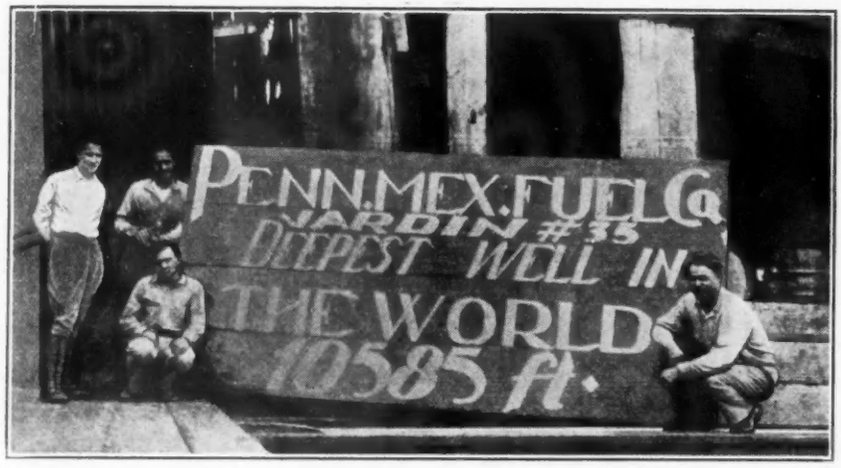
On one flank of the slush pit, next to the pumps, was built a large cement platform to support a standard type, cone mixer having a small steam jet to assist in rapid preparation of dry grout, (mud mixture) or sand and cement grout for formation cementation. On the opposite flank of the slush pit and center settling pit—the smaller one—was a lease fabricated mud plant consisting of two wooden tanks of 400 cubic feet capacity each. There was an extra drilling pump installed in between them having a six-inch valve on each suction line, one line running to each tank. Above one of the boxes or tanks was an old style California trough mixer. This mixer was 10 feet long, the sides of it were six feet high and angled out from the bottom so that they were five feet apart at the top. In the bottom of the trough there was a two-inch steam line running the length of the trough. This line carried 150 small perforations to break up and mix the mud. The mud plant was connected up in such a manner that it could discharge the mixed product into the standpipe, well connections proper, that is, down the casing, or to the compound pump, or to a combination of any of these outlets.

The mud agent used at Jardin 35 was a yellow surface clay dug at the location. This clay was shovelled into a cone hopper with such water as was needed and blown through the shotgun by steam into a mixer. In getting into the mixer it passed through a half-inch mesh screen set at a 15-degree slope to remove gravel and trash. In this manner was produced a mud weighing up to 16 pounds if necessary.

As long as it was needed, the mud plant functioned effectively. It had to function; for the cost of imported admixtures on this Mexican test would have been prohibitive.

Drilling Equipment Used

Jardin 35 was spudded early in 1930 with equipment which had been used on routine work of Penn Mex Fuel



The picture on the opposite page: The crew that drilled the first well to a depth below two miles. Reading from left to right in the front row: T. Armour, tool dresser; H. S. Smith, driller from ground to bottom; George Fertner, drilling superintendent for Penn Mex; J. G. Taylor, driller from spudding time to bottom; Jack Reardon, tool dresser. The men in the back row, standing, are the Mexican helpers who did their work to perfection—"Los Perfectos." Two of the men in the picture on this page you will recognize as Messrs. Armour and Taylor.

Company in Mexico for about two years. The chief articles comprising the equipment layout at spudding time were as follows:

Six 55 horsepower Oil Well Supply boilers, 175-pound. (These boilers were insulated and installed 200 feet behind the rotary engine).

Oil well enclosed twin drilling engine, 11 x 11 inches.

Oil Well Supply Imperial drilling pumps, 12x6¾x14 inches.

National Supply draw works, 5 C3, 5-15/16-inch shafts.

National Ideal rotary table, 20-24-inch, Universal.

Martin-Decker weight indicator.

Later on, when depth and pressures increased, work on Jardin 35 was halted at 4970 feet to augment the above equipment with additional equipment to take care of added derrick loads. This additional equipment consisted of the following:

National Supply Company nine-inch spring hook.

National Supply Company 62-inch, five sheave casing block.

National Type 6B 90-ton three-inch water course swivel.

Slip elevators and spiders for casing.

Wilson tongs and elevators with 2½-inch bails for drill pipe.

(These tongs and elevators were used throughout the drilling of Jardin 35).

National Supply double deck Oklahoma type crown block.

Casing lines 1⅛ inch.

Until the depth at which the 16-inch casing was cemented was reached at 2236 feet, drill pipe used on Jardin 35 was 6⅝ inch 25.20 pound with tool joints on each joint, as is the custom in Oklahoma. The kelly, or grief stem, which was also changed after the 16-inch casing had been cemented, was six inches square and 52 feet long.

In all, three sizes of drill pipe were used. After reaching 2236 feet, the above mentioned drill pipe was replaced with 6⅝ inch flush joint pipe, which was carried on down to 5200 feet. This in turn was replaced at bottom by 4½ inch flush joint pipe which was used to carry the hole to bottom, 10,585 feet.

This drill pipe and tool joints were designed and furnished by The National Supply Company. This company also collaborated with Mr. J. M. Reardon and designed the installation in figure (A) in accordance with his specifications. Mr. Reardon gave considerable preliminary time and study to the problem and visited all the important fields in the Mid-Continent, Rocky Mountains and Canada, as well as California. This study of the most advanced technique in these districts, coupled with his knowledge of conditions to be expected in the Mexican well enabled the National engineers to plan the complete hook-up and work out details of the flush joint drill pipe and equipment.

It is worthy of note that every contingency was successfully handled.

The change from the ordinary drill pipe to flush joint drill pipe was necessary because all drilling below the 16-inch casing was done under 250 pounds of water pressure. A double deck stuffing box designed by National Supply Company was used to make the seal around the flush joint drill pipe. The derrick floor was 11 feet off the ground, hence all drilling connections were 11 feet long, or shorter. The upper half of the kelly for this pressure drilling was square, the lower half round, the round part going through the stuffing box to make room for a 10-foot pup connection. (When three pups had been put on the drill stem, they were replaced by a 30-foot joint of regular flush drill pipe).

Engine Installation

A very effective method of reducing vibration to a minimum in the wooden derrick was used on Jardin 35. The method would seem a sensible one to use on any deep test remote from ordinary supplies. The twin engine was placed, as is customary, on a level with the derrick floor and bolted to six 10 by 10 by 16 foot beams which were themselves rigidly bolted together. These rested on three pony sills which were supported by nine vertical timbers. Two-inch boards were securely nailed to the outside of the upright timbers, and the walled-in, central space thus created was filled with gravel. As a further measure to eliminate rig vibration due to excessive speed of the engine in handling the heavy drill pipe, two braces made from 10-ich by 10-inch by 26 foot timbers were keyed and turnbuckled from a cement "deadman" out in back of the engine to the back end of the engine block.

The early casing program called for 190 feet of 22-inch inside diameter stove pipe, which was spudded through the surface gravel with cable tools and cemented. This having been done, the bull wheels and sand reel were removed from the rig. Then a 21½ inch hole was drilled with fish tails and Hughes rock bits to 2236 feet, the base of the San Felipe lime. Old size 16-inch A. P. I., 75-pound, lapweld casing was floated in with a Baker side cement shoe and cemented at this depth with 400 sacks.

Through Stuffing Box and Fittings

The 16-inch casing was swung on a Regan head, to which was flanged a 16-inch, 2500-pound Kerotest drilling valve;

300,000 BARRELS OF HOT SALT WATER A DAY

One of the Problems

flanged to the drilling valve and projecting upward was a 14-foot nipple, flanged at the top to receive a 6⅝ inch stuffing box. The top of this stuffing box flange was six feet below the top of the cellar and was supported by platform previously mentioned. This platform also permitted a vantage point from which to tighten the screwed stuffing box glands. When drilling, the top of the stuffing box proper was 13 feet below the rotary table. Three short work joints, previously referred to as "pups", were used to make drill stem connections as the square portion of the kelly could not go through the stuffing box. Immediately above the 16-inch valve, an eight-inch, 2500-pound Kerotest drilling valve with a short nipple was welded to a 16-inch bit nipple. This eight-inch valve was an emergency installation only. An universal joint with a straight shot valve stem extension of 4½ inch drill pipe led from the larger valve to the mouth of the tunnel. Two universal joints with two-inch hydraulic pipe were used to extend control of the eight-inch emergency valve. Both the valves could be opened or closed only on the surface, 100 feet away from the rig. Lay tongs had to be used on them.

The eight-inch relief line, or flow line, through the high pressure fittings was carried past that corner of the rig nearest the brake to the far end of the largest settling pit.

Behind one of the cement corners of the rig was a second eight-inch, 2500-pound drilling valve which was bypassed with three chokers. These chokers were one-half inch, one-inch and two-inch.

The two large steel I-beam supports resting on top of the cement walls of the cellar and supporting the spider and split bushing permitted using two sets of slips all the time.

Previously the writer referred to a 14-foot "bit nipple." This nipple, which stood above the drilling valve, accomodated core barrels and bits with double three point reamers. The drill collars and check, or float valves were of the same outside diameter as the drill pipe, so that it was very simple to come out of the hole. They simply pulled the bit top up against the stuffing box, and then closed the drilling valve below the bottom of the bit. Then the stuffing box could be eased up if necessary. This practice by the way, is simple and fool-proof. Therefore, it is sound.

Special Stuffing Box

The double stuffing box contained two heavy rubber rings, or sleeves, one above the other. Each was separately actuated or tightened by a screw gland. With ordinary pressure not exceeding 500 pounds, the drillers authorized the tightening of only the upper ring. When one of the top rubbers wore out during drilling, the men on the job found it a simple matter to replace it with a new one within half an hour after they had tightened the lower, or emergency, gland.

In drilling the first 3000 feet under pressure with the 6⅝ inch flush drill pipe, the daily tour reports show that the men were called upon only twice to change the top rubber while the pipe was in the hole.

Reverse circulation was used during last 5000 feet. However, from 9900 feet to bottom at 10,585 feet, it was a different story. Reverse circulation was used, but no pumps were used because of the detrimental nature of asphaltic ooze in the Tamasopa lime. There was no cooling agent, and as the water flow from the well registered 157°F. at the end of the flow line, the rubber would burn out in from 24 to 36 hours. The bottom rubber, though, was always in almost perfect condition due to the fact that it had not been in contact with the drill pipe during drilling, so that it never failed to perform its function while the upper rubber was being replaced.

The men on the job got quite a thrill out of changing a packing agent with the 250-pound steam, gas and water pressure coming up at a temperature of 157 degrees and with two miles of pipe hanging right where they were working. Pipe never hangs just where one wishes it to hang, i. e., in the true center, and we rather imagine that the eight-inch gas jet used for clarifying the cellar atmosphere of harmful gasses facilitated conversation about as much as a barrage thrown over and ahead by French 75's.

Jardin 35 would have made a stripper well in the Tamasopa lime below the San Felipe, but the oil and gas encountered there did not hinder or delay making hole. It was after drilling down to 2355 feet that Jardin 35 encountered a strong flow of gas saturated hot salt water. One of the men on the job, in telling of the amount of water they had to handle, said: "At 2355 feet we ran into the Atlantic and Pacific oceans combined."

The water at that time had a temperature of 145 degrees, and the gas—one of the drillers who had known the inconveniences of the rotten gas at Borger and Crane in Texas said the gas from Jardin 35 was worse, if that were possible.

Drilling Under Pressure

Instrument charts show that the pressure at the surface remained around 250 pounds from 2355 feet to the bottom of the hole. (This would be better than equivalent to 3500 pounds hydrostatic pressure on bottom). It was not so much the pressure of the gas that made it objectionable, but rather it was the consistency and monotony of that pressure. (Incidentally, though the pressure remained the same, it was apparent that it would have been possible for one stratum to feed another. The open flow temperature

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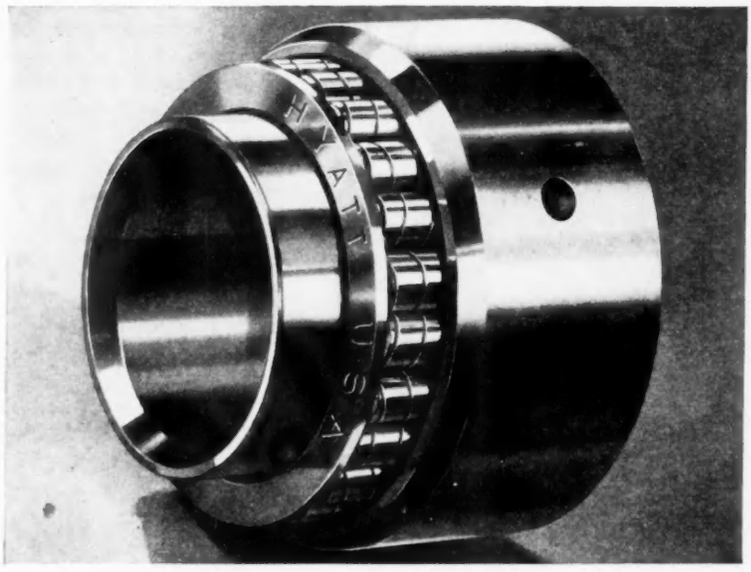

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of the water increased with the increase in volume). It was the impression of some of the men that the chemical content of the water constantly varied, although this was not substantiated with actual analyses.

From 2355 feet to 2732 and from 3670 to 5200 feet drill stem, bit, core barrel, drill collar, check valves and three stands had to be snubbed in the hole and out.

Snubbing was done with the calf wheel; a line run therefrom over the crown block held suspended a large "C" hook. Another line was doubled through the "C" hook and the two ends of this line ran under two standard crown pulleys fastened beneath the floor sills, one on each side of the rotary table. Thence the ends of the line were carried to the ends of a casing clamp which loosely gripped a nipple screwed into an elevator plug. The Wilson elevators gripped the nipple above the clamps. This device easily screwed into or out of a stand of pipe in the derrick.

It was regular practice on Jardin 35 to snub in a whole stand of 6⅝ inch drill pipe at a time. Using an Ajax 14 by 14 engine and a single line from a calf wheel, they found it was not likely that the stand (90 feet long) would get bent. Several attempts were made to bend a 90-foot stand in this manner, but failed.

Due to the fact that the well had pressure, every connection broken, whether kelly, pup, single, or stand, came out wet the same as it would have if the bit had been plugged. That the salt water was hot made it even more disagreeable. In order to make it safe to work on the floor, a splash guard, eight feet high, was made of 10-inch casing, ripped and hinged vertically in two parts in such a way that when closed around the joint it kept most of the fluid from shooting out on the men and floor. When not in immediate use, this guard was swung in the derrick like an ordinary pair of breakout tongs.

Corrosional Effects of Fluid

When a joint was loosened in coming out of the hole, the splash guard would deflect the flow of salt fluid down over the rotary table. Naturally the snubbing lines were saturated with it. In early snubbing on the well the operators used ends of standard seven-eighths-inch drilling lines. After these ends had been subjected to a month of snubbing service they crystallized.

The smaller line was replaced with A. Leschen and Sons Rope Company's 1⅛-inch Red Strand casing line ends. This was used for two months and then discarded as a safety measure, although after the latter heavier line had reposed in the junk pile for four months it was not rusted on the inside.

It should be emphasized that in the class of work which was at that time being done on Jardin 35 one could ill afford to take chances. Had some minor inexpensive piece of equipment failed in snubbing, it would have been little short of miraculous if any anchor or bolts or connections made would have been able to withstand the blow.

There is always hope of exhausting or extinguishing a burning well, but a wild well of steaming salt water, a well with a 25-foot cellar, is a most horrible thing to conceive. And the water on Jardin 35 was not only inexhaustible but would have cooked the hide lightning-quick off any of the men who tried to cope with it.

The corrosional effect of the fluid on everything with which it came in contact was about similar to the effect it had on the small snubbing line—with the exception of the drill pipe, tool joints and bits. (When the drill pipe was laid down it was dipped in oil to protect it). But pump manifolds, standpipe, and well connections were eaten up with rust resulting from chemical reaction of the circulating fluid. Replacement records of the well show it was necessary to replace valve seats dozens of times, to say nothing of the manifolds, standpipe and other well connections—all of which had to be replaced.

Advantages of Drilling Against Pressure

Surely, this drilling against pressure had its advantages too. One was that no precaution had to be taken about getting the circulating fluid too heavy or too thick. Ever since the salt water flow had been encountered at 2355 feet it was impossible to use mud. The formation was continuous lime. There was no caving.

One great disadvantage was in the slowness of making round trips—snubbing in, snubbing out—the men were al-

Condensed progress report, Penn Mex Fuel Company Well "Jardin No. 35"

Date	Casing Used	Hole Drilled for Casing	Cores Taken	Fishing Jobs	Bits Used	Formation	Shut Down Time
1930 Feb. 24	190 feet 22" inside diameter stove pipe.	25"	none	None	Cable bit.	Surface clay, gravel and shale.	None
Feb. 24 to May 21	2236 feet of 16" 75-lb 8th lap weld cemented with 400 sacks.	21½	7	Lost bottom joint and drill collar and bit twice.	Fish tail and Hughes Rock Bit.	Shale and sand rock to 2209. San Felipe to 2236.	From April 17 to May 21, 1930, Running 16" pipe, cementing and waiting on cement to set. Put on connections.
May 21 to Aug. 27	2732 feet 13⅜" seamless steel 8th cemented with 327 sacks.	14⅞	20	July 7 dropped 18 stands 6⅝ flush joint 1100 feet to bottom because top and bottom slips failed to hold. July 8 while fishing for dropped pipe snubbing lines broke and blew 6 joints of pipe out of hole.	Reed Rock Bit and Reed Hard Formation Core Bit.	Tamasopa Lime.	June 23 to Aug. 27, getting ready to run casing, waiting orders and material. Cementing and put on valve.
Aug. 27 Mar. 11 1931	5200 feet 9⅝ 43½-lb seamless Grade "D" 2260-lb. test.	12⅜	35	None	Reed, same as above.	Tamasopa Lime.	Jan. 11 to Mar. 11 getting ready to case. Waiting on casing, cemented casing and put 9⅝ connections and preparing to drill.
1931 Mar. 11 Aug. 30	No casing from 5200 to final. Finished at 10585 feet.	8-9/16	5	Mar. 21 to Mar. 29 fishing and drilling up two core bit cutters and pins, at 5600.	Reed, same as above.	Tamasopa Lime.	One month shut down for drill stem at 7959 feet. From April 17 to May 17. Again waiting on drill stem at 9053 from July 1 to 7th. July 25 to Aug. 2 waiting orders. Aug. 9 to 20 waiting orders.

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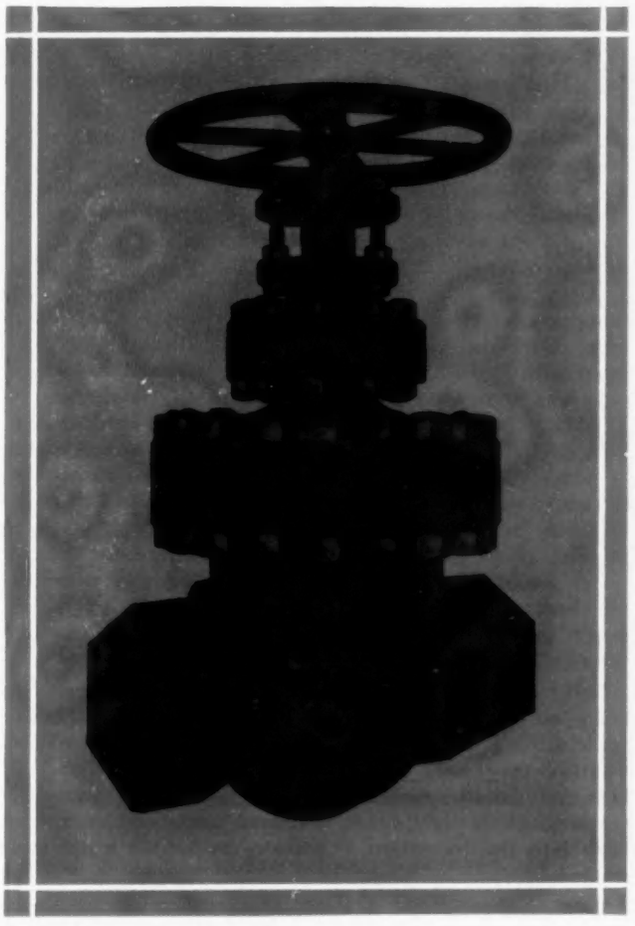

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ways handling a wet string of pipe. Snubbing called for use of two sets of slips, one on the rotary table and the other set in a spider which was placed at the top of the cellar and under the derrick floor. Such an arrangement on a well might have been paradise for the drillers while drilling, but it was certainly hell on the crew while making roundtrips.

May we be pardoned for the suggestion that a 14-foot drill collar above the bit, (6⅝ inch outside diameter with a two-inch water course) and a 90-foot sectional drill collar above that would have saved snubbing. Such a hook-up would have been good, correct, practical drilling technique—provided, of course, such equipment were available. It probably was not available on such a lonely project.

Lest the impression be left that snubbing was necessary all the time, it should be stated that such procedure was not called for between the depths of 2732 feet and 3670 feet and between 5200 feet and 10,585 feet. Pipe came out of the hole normally in the latter horizon. It went in normally, too. The volume of water from 5200 to 10,585 feet was not sufficiently great in upward pressure to call for snubbing. When the relief lines were opened while the pipe was at this horizon, the pressure would drop to practically nothing.

Mud Not Used

There was a cement platform and mixer, apparently idle for a long time. Why did they not use mud? The answer is: they tried everything. From 2355 feet on down in the 16-inch casing and from 3670 feet on down in the 13⅜-inch casing salty water would fill the pits in 20 minutes. The pits were huge. The estimated flow of hot salt water for a short time was at the rate of 300,000 barrels per day. The flow did not seem to come from any single crevice or particular cavern.

Cores taken showed the lime to have highly porous spots, the pores varying in diameter from needle point to half inch. Cores revealed thin layers of the lime highly saturated with asphalt. The action of this asphalt on the drill pipe was somewhat similar to that of the pitch sand in Trinidad. It clogged the pipe like a floating boulder.

In drilling under conditions like this a plentiful supply of water was needed. There were two chokes controlling the water supply. The half-inch choke was too small. The one-inch choke was too large. The men could not open the inch choke a little beyond half of full flow for the salt water would have destroyed it in no time. So when the pits became too full, the well simply was closed in and water pumped from the pits back into the formation through the drill pipe while drilling continued.

Drilling while the water was being introduced seemed to make no difference. Neither did it make any difference while drilling whether one pump or both pumps were used, whether they were connected parallel or in series. The best that could be done was to keep the cuttings above the reamers, where they either remained suspended or filtered back into the formation, eventually to return when least wanted.

Two or three times a week, as required, all the water was pumped back into the formation. Then about 1000 cubic feet of heavy mud was pumped in through the drill pipe. The well was then allowed to blow off—which it always would do if given half a chance. This cleaned the hole out.

Loggy Pipe

Some interesting effects of temperature changes were noted during the drilling of Jardin 35. For example, when the smaller choke (half-inch) was used over a 24-hour period, the returns cooled off to a point where the hand could be immersed in them without great pain. At 5200 feet some one on the job made a note to the effect that during a 20-minute blowing off operation heat expanded the 6⅝ inch drill pipe 14½ inches. The expanding and contracting resulting from temperature changes made it imperative to tighten continually the drilling valve anchor bolts in the cellar.

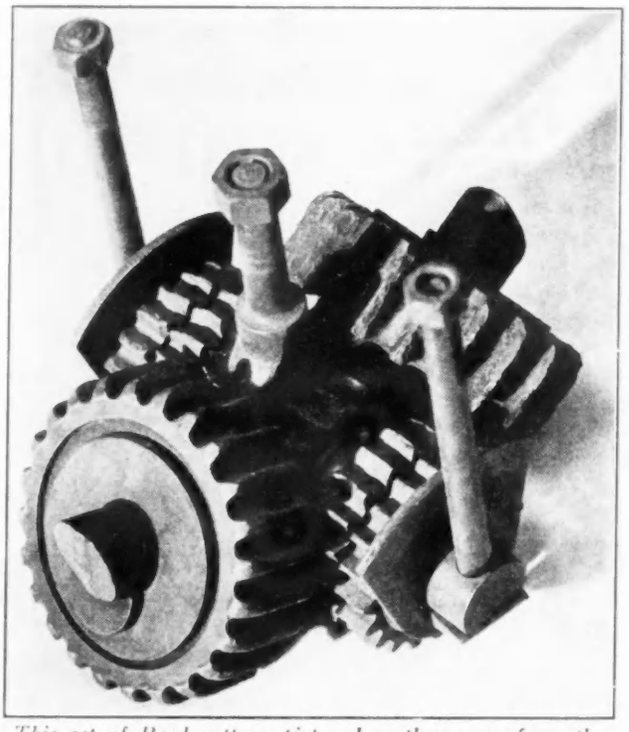
Blowing off such a well was dangerous in the extreme. It imposed tremendous strains on the casing, and hence was not done until absolutely necessary. But the volume of the cuttings, together with their character, was a handicap. For instance, if 40 feet of hole were made, there would be about 30 feet of cuttings.

So long as the pump was running everything was all right, but they could not shut the pump off and then pull up to break out the kelly. If the hose, pump, or any connections leaked or "blowed" and the pipe got too loggy in pulling up, there was no need to pull. All it did was to shove the weight indicator needle around to the peg.

When this situation arose, it was the practice of the crew to get everything ready again, compound the pumps and lower the pipe a little. The weight indicator would tell when the cuttings were washed away from the bit head and reamers. Two or three hours would be consumed in waiting for the indicator needle to show that the pipe was hanging free and that work could be resumed.

It is not improbable that these "periods of waiting" played a major part in protecting the drill pipe from stretching, played a part in making it possible for the well to be carried as deep as it was. However, such periods evidently were trying at times on the patience of the crew.

In the event the above method of loosing the pipe failed, at one time those in charge seriously considered carrying a back-off joint above the drilling tool. If you can discount the idea that asphalt ooze from the lime might get a pretty firm grip on anything poked through it or into it, it seems that it would have been impossible for the flush joint pipe used on Jardin 35 to have gotten hung up at any point other than directly at the drilling tool or reamers. A wash-over job under such conditions would have been almost im-



This set of Reed cutters, pictured as they came from the hole of Jardin 35, was used to drill the last 500 feet

MARTIN - DECKER AUTOMATIC RECORDING WEIGHT INDICATOR

Universal Acceptance

Jardin 35, Deepest Well in the World. Penn-Mex Fuel Co.

Some of the Men, front row seated left to right:

T. Armour, Tool Dresser; H. S. Smith, Driller; G. Fertner, Drilling Supt.; J. G. Taylor, Driller; Jack Reardon, Tool Dresser.

Back row, standing:

The Mexican Helpers—and "Good Ones"

Throughout the world wherever rotary drilling is being done you will find the Martin-Decker Automatic Recording Weight Indicator

IN MEXICO 10585 Feet

Here is what Bill Gross says in his article on the World's deepest Well:

> **"It seems almost unbelievable that such a straight hole could have been drilled in what they have called the Tamasopa lime, especially in the light of the exceeding porosity of the cores taken. One may credit the accomplishment to an almost hawk-like observation of the weight Indicator and continuous use of long double, three point reamers. No Driller can drill successfully through a stuffing box under pressure with rock bits and have a 'sense of feel.' The sense of feel is not there."**

May we add it takes a mighty good Weight Indicator too. Wherever the job is tough you will find the MARTIN-DECKER AUTOMATIC RECORDING WEIGHT INDICATOR.

THE WEIGHT INDICATOR

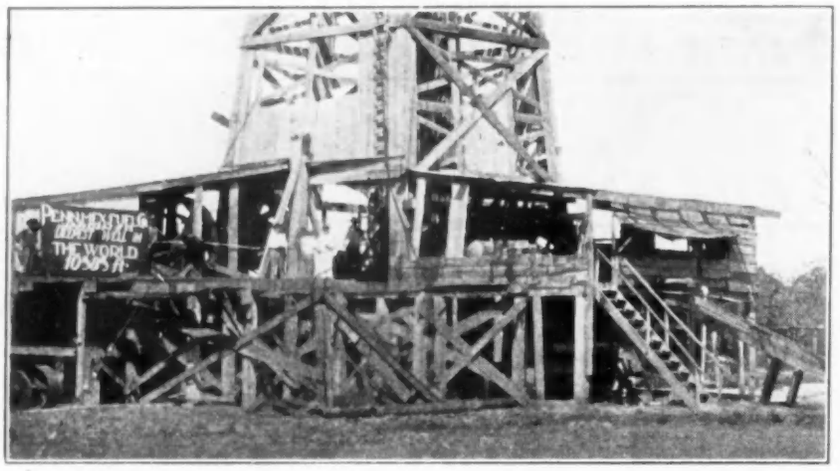
MARTIN DECKER CORP.

LONG BEACH CALIFORNIA

Mid-Continent Distributors
Reed Roller Bit Company
Houston, Texas

Foreign Distributors for Weight Indicator
Oil Well Supply Company
Pittsburgh, Pa.

WEIGHT RECORDING MEASUREMENT AND CONTROL



36 FEET FROM DERRICK FLOOR TO BOTTOM OF CELLAR

▲

possible, and a cutting job, while it would have worked in all probability, would have taken much time and money. It would have been easy to drill on down a short distance and then drop a squib—short piece of dynamite—into the hole.

Killing to Case

Jardin 35 was killed at will several times. (They kept a fluid chart). A 16-inch, steam operated, Cameron Iron Works blow-out preventer was placed, for safety's sake, below the floor and above the stuffing box flange. This was for use in running the 13⅜ inch, 61-pound, seamless A. P. I. casing at 2732 feet. It was used also in running the 9⅝ inch, 43.5-pound, seamless A. P. I. at 5200 feet. This latter casing was grade "D". Baker float shoes and float collars were used on both strings, and the well was killed to run both strings.

A strange thing developed with reference to fluid levels while running this casing. The top of the mud stood about 250 feet from the top of the 16-inch casing while running the 13⅜ inch casing. And it stood 180 feet down in the 13⅜ inch casing while running the 9⅝ inch. Both strings were run, circulated into the porous formation and cemented through the inner string without movement up or down at the top of this mud fluid.

This required a large amount of mud at each cementing and there never was any of the mud returned to the slush pit.

Four days after the above cementation a second batch of mud was pumped down between the 16-inch and the 13⅜ inch casing until the top of it was at 2150 feet. Five days after cementing the 9⅝ inch casing at 5200 feet, cement was strapped, or measured, between the 13⅜ and the 9⅝ inch casing so that the top of the grout stopped at 2625 feet.

All the casing was anchored together with Regan heads. All connections for the 13⅜ inch casing were the same type as those for the 16-inch casing.

After cemeting the 9⅝ inch at 5200 feet, a 9⅝ inch, 6000 pound test valve was flanged to the Regan head. Then a 10-inch Cameron blow-out preventer, connected closely to the 6000-pound valve, carried the usual bit nipple above it. Above the nipple a second 6000-pound test drilling valve was placed for emergency, and the 9⅝ inch stuffing box flange assembled on top.

The usual set up of flow lines, as described before, was connected through the blow-out preventer instead of being welded to the bit nipple as previously.

A chart showing the casing program, the occurrence of fishing jobs, the major formations, and shut down time is at the bottom of the foregoing page.

With the 9⅝ inch casing set, 4½ inch flush joint drill pipe was stood up at 5200 feet and drilling proceeded with an 8-9/16 inch Reed type 31 rock bit with a double, three point reamer, and with a Reed hard formation core barrel. This size hole was made to bottom.

Formation from the shoe of the 9⅝ casing to bottom was porous. A written memorandum made by one of the men on the well shortly after drilling was resumed below 5200 feet reads:

"We get hung up continuously using mud as a drilling agent. With thin mud or water the cuttings will not wash from the hole when pumping down through the drill pipe. When we resort to the blow-off method, pumping in a charge of mud through the drill pipe and then opening up the well connections it freezes the bit, due, I suppose, to the sudden return in the hole of large quantities of cuttings which must have been forced back into the formation by the pumping."

Resort to Fauck System

After a depth of 5600 feet was reached in Jardin 35, reverse circulation, as with the Fauck System, was employed. Check valves were removed above the bit and the pumps run so that they pumped down the casing and forced the returns back up through the drill pipe. This system was more effective in raising the lime cuttings to the surface because the velocity of returns upward through the drill pipe was much greater than it would have been had they been returned up through the casing, on the outside of the drill pipe, as before. Hence, these cuttings had far less opportunity to lag or "float."

Such practice kept the hole clean and reduced the amount of coring. A glance at the foregoing chart will show that little coring was done after 5600 feet. It was not necessary, since the returns were complete and rapid. Upward movement of the cuttings was facilitated by enlarging two of the wash holes in the Reed bit. The writer observed that some of the lime fragments thus brought to the surface were as large as medium sized pecans, while the average size of them was about that of a full grown grain of corn. But even after the wash holes had been enlarged, many times the bit was plugged at the bottom because the holes still were too small. However, regular circulation would clear up the holes, especially if rotating were continued. Complete avoidance of plugging was practically impossible.

Anticipating trouble at this phase of the game with water volume, the men put their heads together and designed and made a reversing tool to run above the bit. It was in the nature of a check valve, permitting regular rotary method circulation at any place in the hole, but permitting reverse

A New RECORD DEPTH

Drilled to 10,585 feet, the world's deepest well is a triumph for Penn-Mex Fuel Company and a supreme achievement for "Oilwell" equipment. Jardin No. 35 was drilled at Alamo, Vera Cruz, Mexico, in the face of tremendous difficulties—such as extremely hot, high-pressure salt water and poisonous gas.

CREW OF JARDIN No. 35—*Left to right: R. J. Reardon, assistant driller; H. S. Smith, driller; G. S. Fertner, drilling superintendent; W. S. Gattrell, driller; J. G. Taylor, driller. Special mention is due J. M. Reardon, manager in Mexico, who does not appear in above photograph.*

The boilers, pumps and engine performed with the greatest satisfaction from start to finish in the drilling of this well.

Everyone working on the well had nothing but praise for the 11″x11″ "Oilwell" Twin Cylinder Steam Engine. No replacement of worn parts was necessary. The two 12″x6¾″x14″ Imperial Mud Hog Pumps reached a working pressure of 1000 pounds. With a battery of six "Oilwell" 50-H.P., 175-pound W. P. Boilers, only four to five were fired at one time for adequate steam.

OIL WELL SUPPLY CO.

Branch Stores in all Oil Fields

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

1710

"OILWELL"

circulation only on bottom. They did not have to use this piece of paraphernalia as the volume of water in the 8-9/16-inch hole was not sufficiently great to bother as long as the relief line was open.

One of the men wrote that it was a pity they did not think of the contraption while they were laboring between 3760 feet and 5200 feet.

Parenthetically I would state that contrary to accepted opinion, some of the men who worked on Jardin 35 assume from their experience thereon that rock bits make large cuttings in line but chew them into small pieces with the reamers. This assumption is based on the natural tendency of the cuttings in this peculiar type of asphalt impregnated lime to get suspended immediately above the reamers. To have gotten there the cuttings must have passed by the reamers and must have been subjected to their grinding.

The 4½-inch flush joint drill pipe served from 5200 feet to 9833 feet. From 9833 feet to bottom, 10,585 feet, drilling was done with 7814 feet of the same drill pipe on the lower portion of the pipe suspended from an upper section made up of 6⅝-inch drill pipe. The 6⅝-inch drill pipe was run and pulled out by closing the 4½-inch rams in the blow-out preventer and stripping reducing rings into the stuffing box. This latter was a task difficult and tedious.

Condition of Hole

Almost paradoxical it is that no great difficulties were experienced as the hole neared and passed the two mile depth—except, of course, those difficulties caused by ooze from occasional batches of asphalt.

When Jardin 35 was shut down at 10,585 feet the hole was clear and in perfect condition to receive seven-inch casing. Acid bottle tests showed the hole to be straight as far down as 7800 feet, and the crew of men who worked on the well believed it could be continued almost indefinitely—say for another mile. (No acid bottle tests were run after the depth of 7800 feet was passed.)

It seems almost unbelievable that such a straight hole could have been drilled in what they have called the Tamasopa lime, especially in the light of the exceeding porosity of the cores taken. One may credit the accomplishment to an almost hawk-like observation of the weight indicator and continuous use of long double, three point reamers. No driller can drill successfully through a stuffing box under pressure with rock bits and have a "sense of feel". The sense of feel is not there.

Cores taken in the lime showed the formation to be horizontal; and the log did not record any significant cavities. The formation altered from greater or lesser streaks of hard dense lime to soft, porous, or honeycomb lime from the time the Tamasopa was encountered at 2267 feet to below the point at which the 16-inch casing was set.

In another memo, written down by an observer, is the following note:

"While there were rare streaks of bentonite an inch or so thick in occasional cores, there was no shale break in the Tamasopa; neither was there any indication of schist."

From a drilling standpoint the men on Jardin have successfully overcome great hazards, almost as great as if they had been in heaving shale. That they were fortunate is not to be denied. Neither is it to be denied that they used their heads. In introspect the drilling of the two miles to them seems easy. I said in retrospect.

The men who made up the crew were W. S. Gattrell, who drilled to 5600 feet; Judson Taylor, who drilled from beginning to end; H. S. Smith, who did likewise, and C. T. Duncan, deceased, who drilled to 8000 feet. T. Armour and Jack Reardon were tool dressers. They, along with the Mexican helpers, performed excellently. All can look back upon a task well done.

Every man who worked on the well hopes he will survive to see it carried to a depth of three miles. Such a spirit made it possible for Jardin 35 to be drilled as deep as it was drilled, deeper than any well in the world.

In conclusion, the writer has the temerity to ask: Why can not the 5385 feet of open hole be cased with 6⅝-inch or seven-inch casing? Why can not the cuttings be removed with reverse circulation through a combination string of 3½-inch and 4½-inch flush joint drill pipe for another 5280 feet?

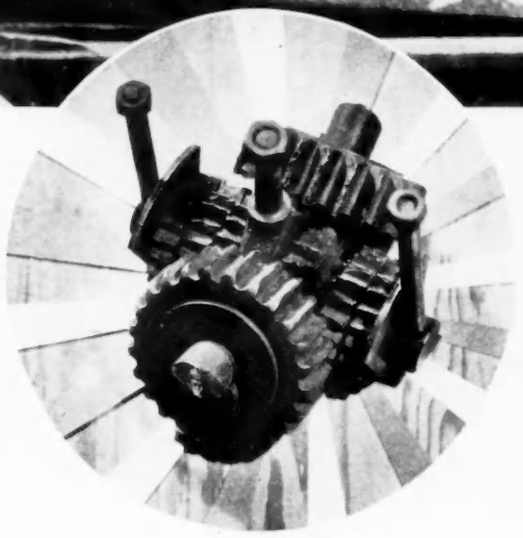
Already Penn Mex Fuel Company has available 10,585 feet of perfect hole. The volumes of geological lore dealing with depths below this are filled with blank pages. Jardin 35 offers an opportunity to fill those blank pages with words of wisdom yet unspoken.

Will Penn Mex Fuel Company fill them?

▲ ▲ ▲

Turner Valley Field, Canada. Photo courtesy C. C. McDermond, Maracaibo, Venezuela.

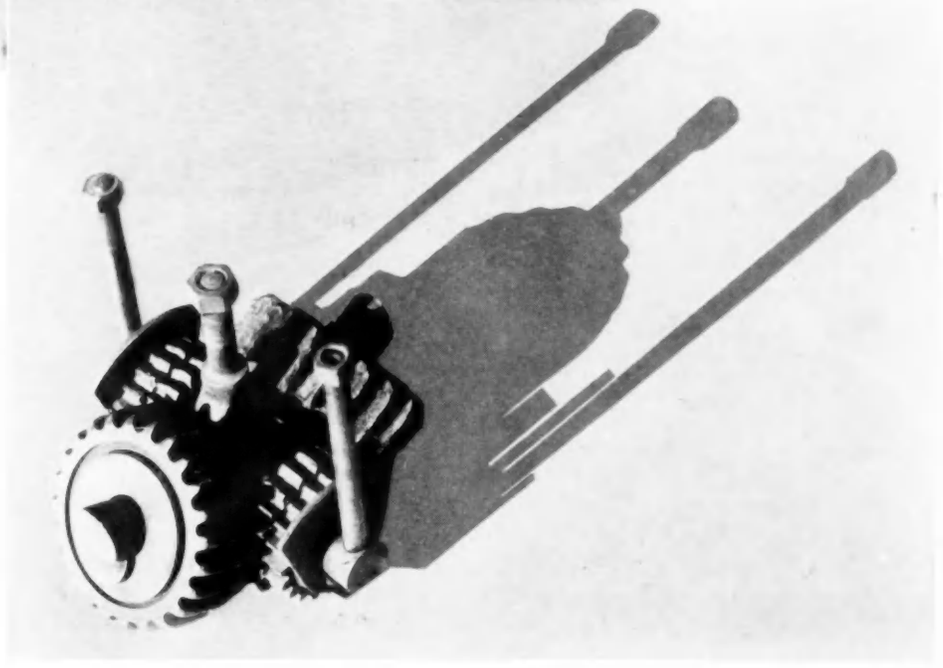
TWO MILES DEEP



WITH A REED BIT

Again the Reed Rock Bit leads the way to new depths below the earth's surface. Just three short years ago it was a Reed Rock Bit, chosen against all other bits, that led the way through solid rock formation to a depth of 7570 feet in the United North and South Development Co.'s test wells in the Luling, Texas, field. Then it was a Reed Rock Bit, chosen over and above all other tools, that led the way to the bottom of the C. C. M. O. Co.'s Olinda 96 at Olinda, California to a depth of 8046 feet. And now it is a Reed Rock Bit (Type 31), chosen over all other tools, that drilled Penn. Mex. Fuel Co.'s Jardin No. 35, near Tuxpan, Mexico, from a depth of 2236 feet to the new record-breaking depth of all time of 10,585 feet. Thus has the Reed Rock Bit, under varied conditions, in varied formations and in widely separated fields proven its superiority and established its supremacy over all rock bits.

The crew who drilled the first well to two miles deep. Front row seated left to right: T. Armour, Tool Dresser; H. S. Smith, Driller; George Fertner, Drilling Supt.; J. G. Taylor, Driller; Jack Reardon, Tool Dresser. Back row: Mexican helpers — "Good Ones."

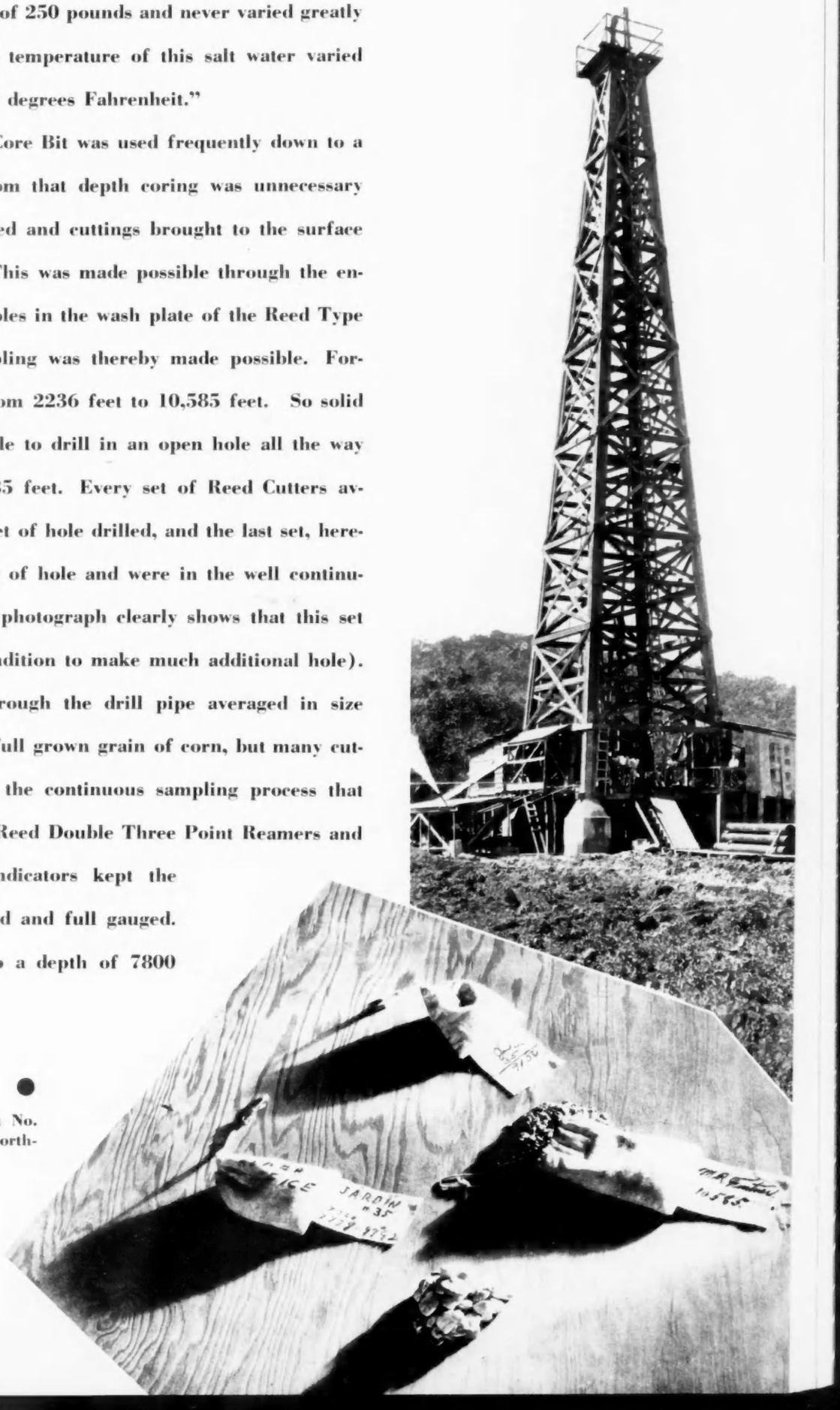


An actual photograph of the set of Reed Cutters which penetrated into the earth 10,585 feet, making 535 feet of hole, staying in the hole ten days and still good for more service.

Far out in the wilds of the State of Vera Cruz, hundreds of kilometers away from a base of supplies, working under unusual handicaps of almost every kind and nature, it was a Reed Bit that proved to be the Rock Bit that could, would and did "get the job done." Three different sizes of Reed Bits were used; 14⅞" Reed Rock Bits made 500 feet of hole; 12¾" Reed Rock Bits made approximately 2500 feet of hole, and 8-9/16" Reed Rock Bits made 5385 feet of hole. As one observer of this well has stated "Up to the time the 16" casing was set at 2236 feet, this well was like any other well. After the 16" casing had been cemented this well entered the list of the unusual. From 2353 feet large volumes of salt water were encountered in the porous lime making it impossible to use mud to drill with, and this condi-

tion lasted until the well was shut down at 10,585 feet. This salt water had a pressure of 250 pounds and never varied greatly from this pressure. The temperature of this salt water varied from 122 degrees to 160 degrees Fahrenheit."

Reed's Hard Formation Core Bit was used frequently down to a depth of 5600 feet. From that depth coring was unnecessary as circulation was reversed and cuttings brought to the surface through the drill pipe. This was made possible through the enlargement of the slush holes in the wash plate of the Reed Type 31 Bit; continuous sampling was thereby made possible. Formation was solid lime from 2236 feet to 10,585 feet. So solid in fact that it was possible to drill in an open hole all the way from 5200 feet to 10,585 feet. Every set of Reed Cutters averaged more than 100 feet of hole drilled, and the last set, herein shown, made 535 feet of hole and were in the well continuously for ten full days (photograph clearly shows that this set of cutters was still in condition to make much additional hole). Cuttings returned up through the drill pipe averaged in size approximately that of a full grown grain of corn, but many cuttings were taken during the continuous sampling process that were as big as a pecan. Reed Double Three Point Reamers and Martin-Decker Weight Indicators kept the hole straight, clean, round and full gauged. Acid bottle tests down to a depth of 7800



Penn. Mex. Fuel Co.'s Jardin No. 35, located 32 kilometers northwest of Tuxpan, Mexico, and some of the cuttings taken at different depths therefrom.

The last sample of formation from the very bottom of the world's deepest hole. Cuttings shown average size of full grown grain of corn.

Note the self-sharpening action which took place on these Type 31 Reed Rock Bit Cutters, even after a service of more than ten days continuous drilling and the making of 535 feet of hole.

feet (no tests made below this depth) showed the hole perfectly straight, and at the finish the hole was clear and in perfect condition to receive 7″ casing. The Reed Roller Bit Company acknowledges a debt of gratitude to Mr. Geo. W. Crawford, President; Mr. J. M. Reardon, General Manager; Mr. George Fertner, Drilling Superintendent; Mr. W. S. Gattrell, Driller; Mr. Judson Taylor, Driller; Mr. H. S. Smith, Driller; Mr. T. Armour, Tool Dresser; Mr. Jack Reardon, Tool Dresser, and the splendid crew of Mexican helpers, all of whom contributed so largely in making possible this distinctive achievement in the annals of rotary drilling.

REED ROLLER BIT CO.

HOUSTON LOS ANGELES OKLAHOMA CITY NEW YORK CITY

Markets • Production • Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

East Texas Production Drop Only Temporary

Lower production was actually accomplished in East Texas last week, as a result of the new railroad commission limitation order of 185 barrels per well, but the decline proved to be of a temporary nature. While this was to be expected, in view of drilling activity, the result for the week proved disappointing. Daily production figures reported to General Wolters, in charge of military forces in the field, showed that the lowest production rate attained following the new limitation order was about 365,000 barrels. However, this figure was quickly eradicated by the influx of new wells, of which there were 101, with an initial production total of 820,025 barrels. This new crop of wells in East Texas has swelled the total number drilled to more than 2,100, practically all of which are included under the new allowable rate of 185 barrels per well. This means that the allowable for the field is 388,500 barrels a day, with the prospect of increasing at the rate of more than 18,000 barrels a day under existing development practices.

Despite the fact that East Texas development is increasing the rate of production each week, it is to be noted that orders of the railroad commission have not been violated. The power of the railroad commission to revise its orders on short notice offers a reasonable guarantee against serious over-production there in the near future. It can be said, therefore, that there is really no longer any uncertainty as to the production outlook in that area. In fact, when production of East Texas reaches greater proportions, the commission has within its power placing a lower well limit, thereby maintaining a reasonable production level. This situation is being recognized by a majority of the operators in the field and is perhaps the main factor in effecting a curtailment in new drilling. The action of Humble Oil & Refining Company in volunteering to cut its drilling program in East Texas to the extent of 50 per cent established a precedent that will probably be followed by others. It is obvious that such procedure is imperative if the industry is to maintain any degree of economic control over production there.

U. S. Production Down

Figures of daily average crude production reported by the American Petroleum Institute for the week ending September 26 showed a decrease for the United States of 8250 barrels. East Texas production, however, showed an increase over the preceding week of 9850 barrels, mounting to a total daily average of 429,250 barrels. This figure, however, was based upon the week ending Wednesday and did not fully reflect the effect of the new order. Figures for next week are expected to show a substantial decline; down to an average of about 385,000 barrels. Fields that actually contributed to the decline in production last week were California, Gulf Coast, Eastern States and Rocky Mountain states. California production was down 11,300 barrels, bringing the state total down to 500,600 barrels a day. West Texas and Coastal Texas fields contributed to the decline with decreases of 10,100 barrels and 3550 barrels, respectively.

The economic situation has shown little change over last week and the statistical position of the industry remains on a sound footing. Everything continues to point to a better crude market and the feeling is general that higher prices are on the eve of announcement by the major purchasing companies. The only unfavorable factor continues to manifest itself in the wholesale and retail refined oil market. Continued price-cutting has done more to impede action in the crude oil market than anything else, but it is believed that producers are justified in obtaining better prices for crude. Refiners are not without justification in demanding better wholesale prices for gasoline and there is reason to believe that hestitancy to do so is working in favor of those who persistently under sell the retail market. One thing is certain, and that is producers will shortly be granted a higher crude oil market and whether or not the passing of an increase down the line of wholesale and retail refined oil prices eliminates price-cutting, there is economic justification for operating the petroleum industry on a higher scale of prices. Crude production continues to hold at a level that is 156,350 barrels below current market requirements and every barrel of oil drawn from storage brings the industry nearer to the purpose which actuated the inauguration of production control—and that purpose is a fair price that will enable operators to conduct their business at a reasonable profit.

Refinery Runs Curtailed; Gasoline Prices Too Low

Restricted refinery throughput has been adopted for the Mid-Continent area as the result of lower gasoline prices. A few refining plants are being shut down, while many others are reducing crude charges.

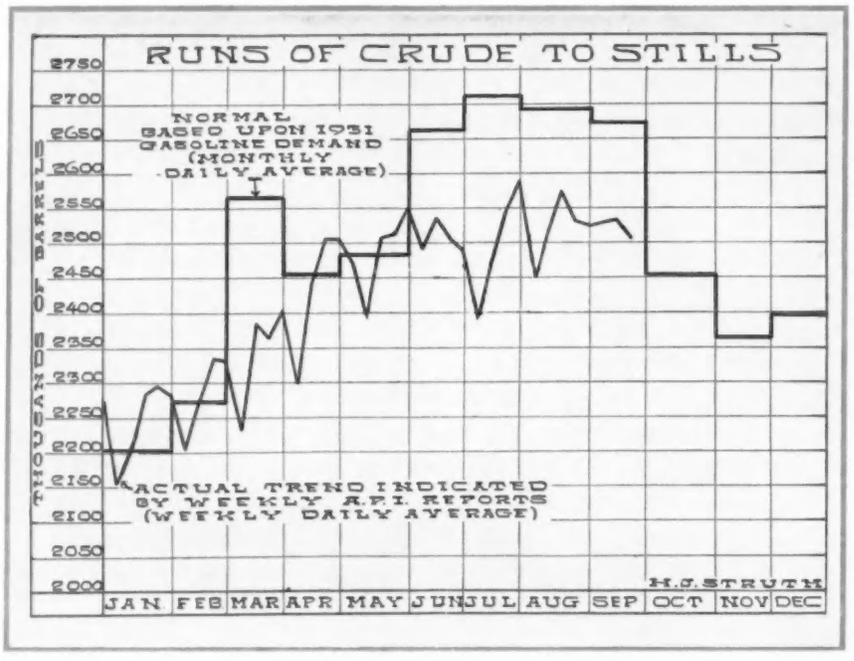
The Argentine plant, near Kansas City, of Sinclair Refining Company will be closed November 1. Some repairs and adjustments will be made and after that the condition of the gasoline market will determine when this plant is reopened.

The plant of Derby Oil & Refining Company at Wichita, Kansas, has been shut down as to its gasoline output and will remain off gasoline production until stocks have been depleted. The plant force will be retained for repair purposes during the week or 10 days of shut down time.

H. F. Wilcox, president of H. F. Wilcox Oil & Gas Company, announced last week that the Texas Panhandle plant would be closed and that the plant at Bristow, Oklahoma, might follow. Mr. Wilcox said in his statement that more money could be made by selling crude oil than by converting it into gasoline. The company's production in the Texas Panhandle will be stored, however.

While these are the only plants being closed, other Mid-Continent refiners are reducing runs. Not until plant throughputs are checked after September 30 will it be possible to determine the reduction in total runs. Indications are that the amount of reduction will at least offset the pickup that came into Mid-Continent refinery runs in August, when tank car

MARKET SECTION



gasoline prices moved upward sharply following the issuance of orders of martial law in Oklahoma and Texas oil fields.

This change in the trend of independent refinery operation is one side of a contrasted condition in the crude oil market. While some refiners are either closing plants or reducing runs because gasoline prices do not allow profit from operation, some major buyers of crude oil are seeking more crude oil. Oil is being withdrawn from storage in a few instances.

It is the peculiar state of affairs which still gives oil producers hope for an increase in the price of crude oil. Producers are being solicited for connections, so the natural conclusion is that the need for oil will force the price upward.

Last week in Oklahoma City, Cicero I. Murray, chairman of the Oil States Advisory Committee, told a gathering of the chamber of commerce of that city that the price of oil would be marked up shortly and that the Oklahoma City field would be reopened under martial law. He spoke confidently of the higher price.

Previously, however, the cousin of the Oklahoma governor gave out a statement to the effect that the opening of the Oklahoma City pool would not hinge on a specified price. He said that Governor Murray had issued his martial law order because buyers failed to pay as much as a dollar a barrel but that the condition of lifting martial law did not depend

Crude Runs to Stills, Gasoline Stocks and Gas and Fuel Oil Stocks

Week Ending September 19, 1931
(Figures in barrels of 42 gallons)

District	Potential Capacity (Daily) Total	Potential Capacity (Daily) Reporting	Potential Capacity (Daily) Per Cent	Crude Runs to Stills Total	Crude Runs to Stills Daily Average	Crude Runs to Stills Per c't Operated	Gasoline Stocks (see note below)	Gas & Fuel Oil Stocks
East Coast	633,700	633,700	100.0	3,481,000	497,300	78.5	3,935,000	10,799,000
Appalachian	149,600	137,400	91.8	786,000	112,300	81.7	1,209,000	1,585,000
Ind., Ill., Ky.	436,300	431,500	98.9	2,356,000	336,500	78.0	3,828,000	4,924,000
Okla., Kans., Mo.	485,700	435,200	89.6	1,974,000	282,000	64.8	2,715,000	5,236,000
Texas	838,200	765,400	91.3	3,588,000	512,600	67.0	5,666,000	11,482,000
Louisiana-Arkansas	233,100	230,500	98.9	1,164,000	166,300	72.1	749,000	3,304,000
Rocky Mountain	159,400	142,300	89.3	348,000	49,700	34.9	1,188,000	808,000
California	912,500	880,100	96.5	3,325,000	475,000	54.0	*11,833,000	96,995,000
Total week Sept. 19	3,848,500	3,656,100	95.0	17,022,000	2,431,700	66.5	31,123,000	135,133,000
Total week Sept. 12	3,848,500	3,656,100	95.0	17,219,000	2,459,900	67.3	31,818,000	135,374,000
Total Sept. 20, 1930	3,686,400	3,525,400	95.6	17,086,000	2,440,900	69.2	(a)35,755,000	140,376,000
The Texas and Louisiana Gulf Coastal figures shown below are included above in the totals of their respective districts.								
Texas Gulf Coast	532,500	531,500	99.8	2,660,000	380,000	71.5	4,493,000	8,137,000
Louisiana Gulf Coast	147,500	147,500	100.0	784,000	112,000	75.9	530,000	2,299,000

Note: In all the refining districts indicated except California, figures in this column represent gasoline stocks at refineries. In *California, they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within continental United States—(stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto).

(a) Revised in Indiana-Illinois district, due to transfer to "Bulk Terminals" of stocks previously reported as "At Refineries".

MARKET SECTION

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

State—	Indicated Demand Third Quarter 1931	Economic Limit Third Quarter 1931	Daily Average Last Week	Daily Excess Last Week	Daily Average Since January 1	Daily Excess S nce January 1†
Arkansas	63,000	60,000	38,100	—21,900	45,137	—10,863
California	510,300	487,500*	500,600	13,100	525,268	29,467
Kansas	127,000	120,000	107,850	—12,150	106,715	—6,285
Louisiana	85,000	75,000	54,500	—20,500	63,529	—10,471
Oklahoma	593,000	550,000*	264,300	—285,900	473,020	—33,680
Texas	860,000	797,000*	1,019,750	222,750	881,634	169,934
Balance of U. S.	275,000	260,000	208,250	—51,750	206,642	—35,058
Totals	2,528,000	2,349,500	2,193,350	—156,350	2,301,945	103,044

*Allowable.
†Excess based on allowable to date.

on any set price. The oil fraternity has come to believe that the dollar price and the lifting of martial law are interwoven.

Both banking houses and equipment manufacturers continue to urge the lifting of the martial law ban in Oklahoma.

Regardless of what agreements were or were not made, oil producers in both Oklahoma and Kansas expected higher prices to follow the conference of conservation officials in Oklahoma City, September 11. They thought that the agreement of state officials to restrict output would be rewarded by higher posted schedules.

Because of the orders of martial law Oklahoma production continues well under the 546,000 barrels specified for that state at the Oklahoma City conference. Kansas also is clinging to its allowed output of 110,000 barrels. Texas has been slightly above its 902,000 barrels daily. But the total for the three states is far below the total specified at this conference.

All of this is sufficient to warrant higher prices in the reasoning of oil producers.

Major buyers are not responding to this production total as

Cracked Gasoline Production

Week Ending September 19, 1931

(Barrels of 42 gallons)

District	Potential Charging Capacity (Daily) Total	Reporting	Per Cent	Production Daily Total	Average
East Coast	261,300	236,300	90.4	675,000	96,400
Appalachian	56,300	54,100	96.1	175,000	25,000
Ind., Ill., Ky.	330,400	315,400	95.5	657,000	93,900
Okla., Kans., Mo.	237,800	219,500	92.3	440,000	62,900
Texas	450,800	436,200	96.8	824,000	117,700
Louisiana-Arkansas	112,400	112,400	100.0	226,000	32,300
Rocky Mountain	99,100	97,600	98.5	88,000	12,600
California	190,800	190,800	100.0	304,000	43,400
Total week Sept. 19	1,738,900	1,662,300	95.6	3,389,000	484,200
Total week Sept. 12	1,738,900	1,662,300	95.6	3,563,000	509,000
Total Sept. 20, '30	1,589,200	1,325,400	83.4	2,759,000	394,100
The Texas and Louisiana Gulf Coastal Figures Shown Below are included above in the totals of their respective districts.					
Texas Gulf Coast	352,400	347,400	98.6	652,000	93,100
Louisiana Gulf Cst	77,000	77,000	100.0	165,000	23,600

Imports of Petroleum at Principal United States Ports

(Barrels of 42 gallons)

	Week Ended Sept. 19	Week Ended Sept. 12
AT ATLANTIC COAST PORTS—		
Baltimore	138,000	268,000
Boston	123,000	30,000
New York	882,000	552,000
Philadelphia	272,000	64,000
Others	112,000	157,000
Total	1,527,000	1,071,000
Daily Average	218,143	153,000
AT GULF COAST PORTS—		
Galveston District	.....	82,000
New Orleans and Baton Rouge	167,000	.....
Port Arthur and Sabine District	.....	.....
Tampa	.....	.....
Total	167,000	82,000
Daily Average	23,857	11,714
AT ALL UNITED STATES PORTS—		
Total	1,694,000	1,153,000
Daily Average	242,000	164,714
Daily Average Four Weeks Ended	209,536	185,964
Distribution of total Imports is as follows:		
Crude	987,000	542,000
Gasoline	113,000	264,000
Gas Oil	24,000	.....
Fuel Oil	570,000	347,000
Total	1,694,000	1,153,000

Receipts of California Oil at Atlantic and Gulf Coast Ports

(Barrels of 42 gallons)

	Week Ended Sept. 19	Week Ended Sept. 12
AT ATLANTIC COAST PORTS—		
Baltimore	43,000	.....
Boston	110,000	.....
New York	37,000	90,000
Philadelphia	.....	118,000
Others	36,000	.....
Total	226,000	208,000
Daily Average	32,286	29,714
AT GULF COAST PORTS—		
Total	80,000	40,000
Daily Average	11,428	5,714
AT ATLANTIC AND GULF COAST PORTS—		
Total	306,000	248,000
Daily Average	43,714	35,428
Daily Average Four Weeks Ended	35,642	34,964
Distribution of Total California Oil Receipts is as follows:		
AT ATLANTIC COAST PORTS—		
Gasoline	166,000	208,000
Fuel Oil	60,000	.....
Total	226,000	208,000
AT GULF COAST PORTS—		
Gasoline	80,000	10,000
Kerosene	.....	30,000
Total	80,000	40,000

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United States Daily Average Production

1930	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
June	665,550	133,600	668,300	210,500	40,300	56,900	135,750	84,600	598,000	2,593,500	77,806,900
July	594,750	121,600	652,350	209,400	40,550	55,400	137,200	98,350	610,450	2,520,050	78,121,200
August	558,850	115,650	646,400	206,600	41,500	55,100	128,550	106,000	611,250	2,470,900	76,597,600
September	558,900	116,550	606,550	200,750	40,150	53,550	121,400	110,650	604,900	2,413,400	72,402,205
October	542,100	114,850	609,500	194,850	41,500	52,800	121,750	104,000	590,800	2,372,150	73,536,350
November	491,550	111,400	579,350	190,100	44,050	52,000	116,400	101,950	601,200	2,288,000	68,639,150
December	459,300	105,550	533,400	189,300	43,000	51,100	112,200	100,500	587,450	2,181,800	67,636,500
1931											
January	452,000	106,350	511,050	188,850	41,100	50,700	110,300	96,700	535,700	2,092,750	64,874,450
February	473,750	114,450	523,700	185,600	43,950	49,950	109,800	100,100	527,300	2,128,600	59,600,450
March	531,900	110,550	585,000	177,950	40,250	47,550	108,800	95,400	528,100	2,225,500	68,990,850
April	543,650	109,250	723,050	185,850	39,050	47,000	111,500	95,500	527,350	3,382,200	71,465,750
May	561,950	107,400	767,200	185,950	39,200	46,650	111,250	97,500	534,150	2,451,250	75,975,950
June	556,850	103,150	828,250	170,100	36,500	44,900	108,950	97,950	520,300	2,466,950	74,009,750
July	527,950	100,000	912,250	157,850	33,650	41,400	107,600	94,400	517,900	2,493,000	77,282,700
August	310,000	102,100	976,450	153,650	30,400	37,600	109,450	92,900	510,250	2,322,800	72,004,300
Sept. 5	256,600	98,700	461,150	151,050	29,800	37,900	114,550	93,350	503,200	1,746,300	12,224,100
Sept. 12	256,400	100,600	628,050	149,400	29,900	38,100	114,850	91,400	510,300	1,919,000	13,433,000
Sept. 19	258,450	108,100	892,400	150,350	29,700	38,050	119,300	93,350	511,900	2,201,600	15,411,200
Sept. 26	264,300	107,850	896,150	148,900	29,200	38,100	116,600	91,650	500,600	2,193,350	15,353,450
Increase	5,850	.....	3,750	.....	.....	50	.....	.....	.....	.....	.....
Decrease	.....	250	.....	1,450	500	.....	2,700	1,700	11,300	8,250	57,750

Last Week's Daily Average Production by Districts

TEXAS	Sept. 26	Sept. 19
Panhandle	67,100	65,450
North Texas	54,100	53,400
West Central Texas	25,900	26,050
West Texas	204,850	214,950
East Central Texas	57,850	57,100
East Texas	429,250	419,400
Southwest Texas	57,100	56,050
Texas Gulf Coast	123,600	127,150
Total Texas	1,019,750	1,019,550
OKLAHOMA	264,300	258,450
CALIFORNIA	500,600	511,900
KANSAS	107,850	108,100

LOUISIANA	Sept. 26	Sept. 19
North Louisiana	29,200	29,700
Louisiana Gulf Coast	25,300	23,200
Total Louisiana	54,500	52,900
ARKANSAS	38,100	38,050
MOUNTAIN STATES		
Wyoming	36,650	39,100
Montana	7,900	7,550
Colorado	3,950	3,600
New Mexico	43,150	43,100
Total Mountain States	91,650	93,350
EASTERN STATES	116,600	119,300
TOTAL UNITED STATES	2,193,350	2,201,600

Summarized Review of Field Results

State—	Completions Oil Wells This week	Completions Oil Wells Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	0	0	0	0	0	0	0	0
California	4	6	4	4	0	0	0	2	3,300	8,075
Illinois	0	0	0	0	0	0	0	0	0	0
Indiana	0	3	0	0	0	2	0	1	0	0
Kansas	9	9	4	2	3	4	2	3	415	2,024
Kentucky	1	3	0	1	0	2	1	0	0	25
Louisiana	8	4	1	0	2	1	5	3	3,600	0
Michigan	0	5	0	1	0	1	0	3	0	500
Mississippi	1	0	0	0	1	0	0	0	0	0
New York	0	9	0	2	0	3	0	4	0	14
Ohio	15	26	1	4	13	11	1	11	0	73
Oklahoma	10	15	5	4	1	3	4	8	18,720	8,747
Pennsylvania	1	22	0	5	1	11	0	6	0	13
Texas	119	142	106	111	2	2	11	29	820,680	646,755
West Virginia	10	7	0	1	10	5	0	1	0	1
Totals	178	251	121	135	33	45	24	71	846,715	666,227
Increase	..	..	..	..	..	..	..	..	180,488	..
Decrease	73	..	14	..	12	..	47	..	..	..

Comparison of Permits Granted for New Wells

State—	For Week Ending Sept. 26	Previous Week	This Week 1930	Total This Month	This Month 1930	Total this Year	Total This Date Last Year	1930 Year Total
Arkansas	0	0	2	1	13	27	81	108
California	6	3	25	29	93	287	666	922
Louisiana	3	7	18	23	49	245	773	948
Kansas	5	4	9	23	43	343	772	944
Oklahoma	13	15	34	66	107	636	2,337	2,830
Texas	192	139	108	615	451	4613	5,890	7,052
Totals	219	168	196	757	756	6151	10,519	12,804

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producers hope. Buyers evidently are concerned about gasoline prices. U. S. motor gasoline has been under three cents a gallon. This week opened with three cents, the price commonly quoted. Refiners have no excess supplies, although a few brokers have some gasoline awaiting sale.

Curtailment of refinery runs, which should be in full sway early in October, should strengthen the market for gasoline. If the Oklahoma fields remain under martial law, there should be a tightening of the crude oil market in October. Some buyers are restricted to Oklahoma and Kansas for all crude oil requirements. Rising gasoline prices will in time bring bidding for convenient crude oil.

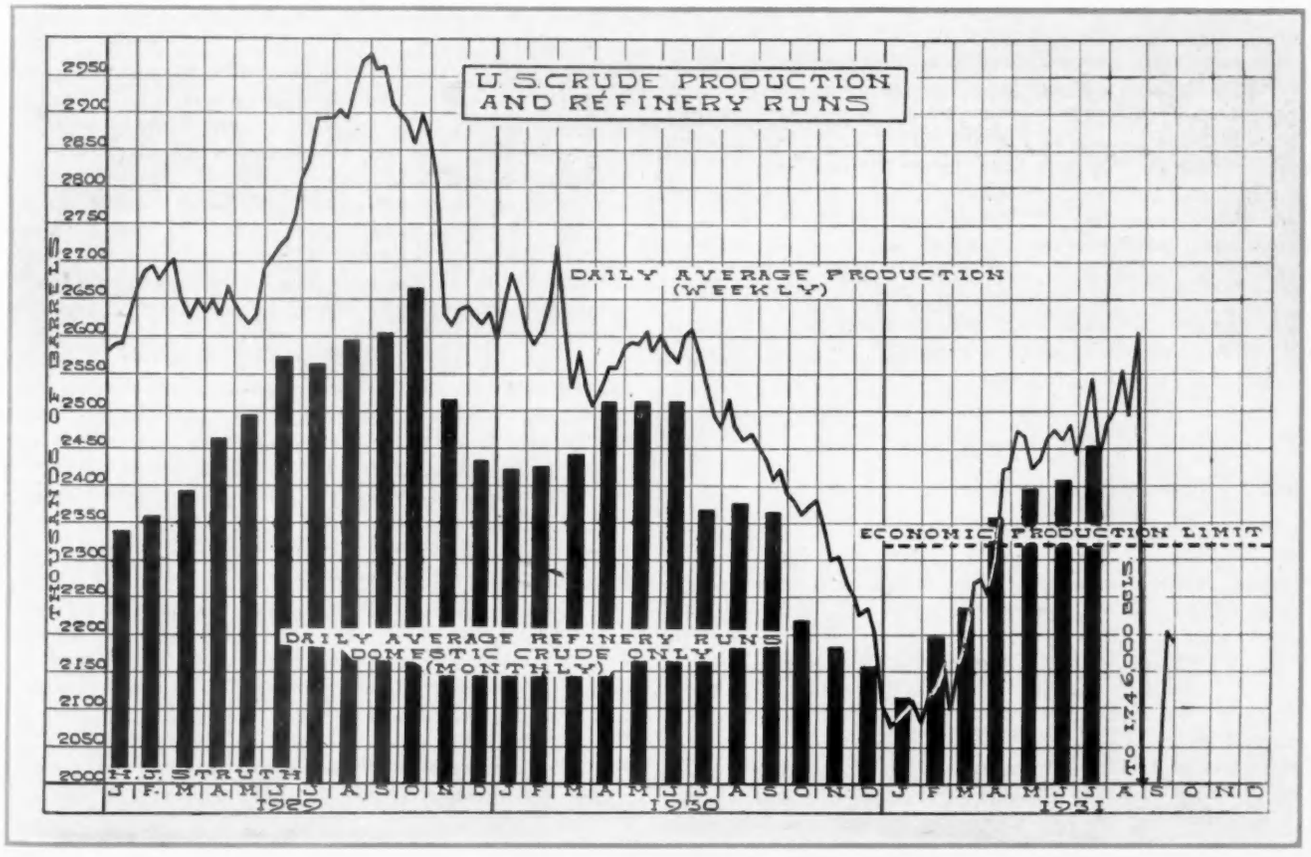
Stored oil of the Slick estate in Oklahoma City is being sold. Stanolind Crude Oil Purchasing Company, Tidal Oil Company and The Texas Company bought about 250,000 barrels last week. Most of the stored oil at Oklahoma City has been held by the Slick interests.

Gasoline Stocks Approach Recommended Goal

Gasoline stocks as of September 26 aggregated approximately 30,773,000 barrels, according to figures obtained from refineries by the American Petroleum Institute. On a Bureau of Mines basis, it is apparent that stocks of gasoline held by all refineries in the United States now probably amount to about 31,500,000 barrels. Recommendations made by the Federal Oil Conservation Board and the Economics Committee of the American Petroleum Institute prescribed working stocks of gasoline as of September 30 at 30,600,000 barrels and 27,184,000 barrels, respectively. On the basis of either of the above estimates of what should constitute normal gasoline stocks at this time, it is seen that the industry has made remarkable strides toward accomplishment of recommended stored supply. While present stocks of gasoline are still above the recommended figures, it is seen that continued effort to hold back unnecessary production could effectively eliminate the indicated surplus within a comparatively short time. In fact, it is entirely within reason to believe that careful pruning of still runs through October could bring gasoline stocks down to the point where a minimum inventory would be assured at the close of the year.

American Petroleum Institute estimates call for a maximum inventory of gasoline on December 31 of 30,284,000 barrels. Refiners, by anticipating the seasonal decline in gasoline consumption, are in a position to maintain run schedules at a level that will effect a sufficient withdrawal of gasoline from storage over the balance of this year to bring the stock figure at the end of the year to about the figure recommended. Instead of adhering to the accepted theory that it is necessary to accumulate gasoline storage during the winter months, the industry should, this year, resolve to keep runs consistently below current market requirements for equivalent gasoline production and determine to begin next year with a clean slate insofar as an economic state of equilibrium is concerned. Those refiners with large stocks of gasoline must temporarily forget operating costs per barrel of crude run through stills and set their operating schedules at a level which will insure the necessary further reduction in gasoline storage and place them in a position to benefit from a generally improved situation next year.

Runs to stills during the past week were sharply cur-



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tailed, showing a decline on a Bureau of Mines basis of 78,000 barrels a day. Daily average runs for the week amounted to 2,426,000 barrels, against 2,504,000 barrels in the preceding week. This would seem to indicate that refiners have generally adopted a policy of continued production control and are determined to balance runs with indicated production of gasoline necessary to accomplish the goal set as normal. If this practice is continued through October it will do much to correct existing inequalities in the refined oil market structure.

California Market Enjoys Strong Statistical Position

A steady reduction in California stocks places the industry in a much stronger statistical position than it has enjoyed for some time. This does not mean that conditions have shown a complete reversal, but it does indicate that the present trend will ultimately lead toward stocks much lower than those carried during the past two years. The total stock decrease for California during 1931 has been exactly 10,000,000 barrels. The decline has been steady and orderly.

Production has declined slightly and elimination of excesses in two or three fields should bring the state output to the base allowable of 487,500 barrels. None of the fields promise to get out of control, while an analysis shows that only Kettleman Hills could produce very much more than the present output. Shut-in production stands at around 350,000 barrels, as against a much higher figure claimed by various committees. Kettleman Hills has a high potential, with a production above 60,000 barrels. It can not be denied that a large production is shut in in this field, and that a much larger production could be developed by completing the wells shut down on top of the Temblor.

Exports during September have been especially satisfactory, but the movement to the Atlantic seaboard has been hampered by increased exports from other points, notably South America. Panama Canal shipments have increased over the average summer month, however.

The local gasoline situation is affecting both the crude and refined markets. For some reason refiners have been unable to control the retail markets and gasoline has been selling at very low prices at service stations.

Australia and the Orient have been taking California gasoline and fuel oil in large quantities, but have not raised their bids as much as was expected when crude prices were adjusted a few months ago.

Macmillan Pays Premium For Smackover Crude

El Dorado, Ark.—Macmillan Petroleum Corporation, which operates a 2000-barrel skimming plant at Norphelt, Arkansas, a few miles east of El Dorado, has recently tied into several leases in the Smackover field and is taking production on which it is paying a premium of 10 cents to 15 cents. Among the leases Macmillan Petroleum Corporation has recently tied into are Hollyfield and McFarlane's leases in Union County, with a daily average yield of 400 barrels, on which 10 cents premium is being paid; Wingfield and associates' Farris and Watts lease, in Section 27-15-15, with 40 barrels daily, formerly run by Atlas Pipe Line Company, on which 15 cents premium is paid; Sam Sklar's Berg lease, in Section 30-15-15, formerly run by Root Refining Company, on which a 10 cent premium is being paid; and J. B. Reynolds lease, with 100 barrels yield, formerly run by Lion Oil Refining Company, on which a 16 cent premium is being paid.

Sagging Gasoline Prices and Dull Demand Apparently Checked

Sagging prices and dull demand for gasoline during the past 10 days appeared to have run its course early this week, and plant owners at interior refining centers of Texas reported unmistakeable signs of the decline being checked. Prices of U. S. motor gasoline within the past 30 days, with a seasonal low of about 2½ cents per gallon. Sales made in tank car lots early this week ranged from the above low figure to a top price of three cents, with most plants demanding the latter for first half October shipments.

This reactionary development in the refined oil market has spiked all possibilities of a resumption of bonuses for crude in North Texas although premium payments were threatened early in September because of crude supply being inadequate. However, the recent suspension, or part time operation of a number of North Texas refineries has thrown considerable spot crude back on the market, and a slight surplus now prevails in some areas because of this curb in independent buying.

Bell Oil & Gas Company, which led off with a crude price advance in North Texas in August in order to obtain crude for its plant in Southern Oklahoma, announced September 23 that its price offers for North Texas and Southern Oklahoma crude would be 20 cents less than the major companies, or 50 cents for 40 gravity and above. Other independent refiners in direct competition with the above company have taken no action toward meeting the cut, as there is still danger of plant owners losing all their crude connections to majors through trying to force producers to take less for crude.

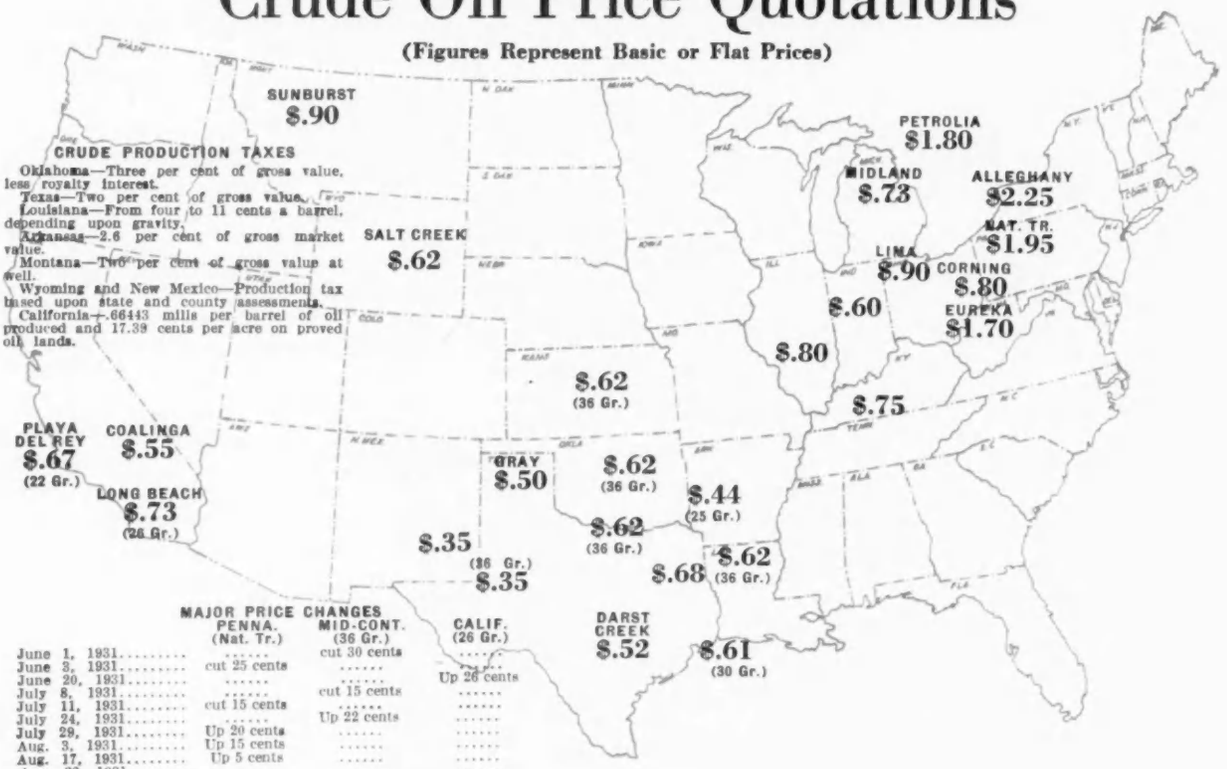
Stanolind Crude Oil Purchasing Company continues to convey strong support to the Mid-Continent crude market, and recently took only 300 barrels of settled daily production in the Wilbarger County section of North Texas from Waggoner Refining Company. The latter asked for relief from the above connections after having taken same early in the summer from Stanolind Oil & Gas Company, The Texas Company, Magnolia Petroleum Company and others, to operate its refinery at Electra.

Suspension of operations of Wilcox Oil & Gas Company's refinery at Pampa, located in the Texas Panhandle, was authorized by officials of the company because of inability to register a profit from prevailing refined oil prices. This company has approximately 1900 barrels of its own production in the Pampa area, and will divert same to four nearby 55,000-barrel tanks for storage while the plant is inactive, although a ready market is available locally for such production.

Shreveport.—Simms Oil Company of Dallas, Texas, abandoned 29 stripper wells in the old Homer field of Claiborne Parish, during the last week. The wells abandoned are located in Sections 29, 30 and 31-21-7w. Simms Company has had some trouble in getting pipe line connections in this field recently due to withdrawal of Atlas Pipe Line Company as a purchaser in that district, but whether this was a contributing factor to the abandonment was not learned here.

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices)



CRUDE PRODUCTION TAXES

Oklahoma—Three per cent of gross value, less royalty interest.
Texas—Two per cent of gross value.
Louisiana—From four to 11 cents a barrel, depending upon gravity.
Arkansas—2.6 per cent of gross market value.
Montana—Two per cent of gross value at well.
Wyoming and New Mexico—Production tax based upon state and county assessments.
California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (26 Gr.)
June 1, 1931	.....	cut 30 cents	.....
June 3, 1931	cut 25 cents	.....	.....
June 20, 1931	.....	.....	Up 26 cents
July 8, 1931	.....	cut 15 cents	.....
July 11, 1931	cut 15 cents	.....	.....
July 24, 1931	.....	Up 22 cents	.....
July 29, 1931	Up 20 cents	.....	.....
Aug. 3, 1931	Up 15 cents	.....	.....
Aug. 17, 1931	Up 5 cents	.....	.....
Aug. 22, 1931	.....	.....	.....
Aug. 29, 1931	Up 5 cents	Up 24 cents	.....

Official Postings and Differentials

(Revised to September 29, 1931)

California: (Effective June 19, 1931.

Signal Hill, Seal Beach and Alamitos Heights: 14 to 22.9 gravity 65 cents; 23 gravity, 67 cents with differential of two cents for each degree upward. Top price for Signal Hill, 30 gravity, 81 cents; top price Seal Beach and Alamitos Heights, 27 gravity, 75 cents.

Huntington Beach: 14 to 21 gravity, 65 cents; 22 gravity, 66 cents with differential of two cents for each degree upward. Top price, 27 gravity, 76 cents.

Inglewood: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity 76 cents.

Playa Del Rey: 19 to 20.9 gravity 65 cents with differential of one cent for each degree upward. Top price, 25 gravity, 70 cents.

Olinda and Brea Canyon: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents; 22 gravity 68 cents with differential of two cents for each degree upward. Top price, 28 gravity, 80 cents.

Coyote Hills: 14 to 22.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents with differential of two cents for each degree upward. Top price, 28 gravity, 79 cents.

Santa Fe Springs: 24 to 26.9 gravity 65 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 73 cents; 30 gravity 75 cents; 31 gravity 78 cents; 32 gravity 80 cents; 33 gravity 83 cents; 34 gravity 85 cents; 35 gravity and above 87 cents.

Whittier, La Habra and Montebello: 65 cents a barrel.

Torrance: 14 to 21.9 gravity 65 cents with differential of one cent for each degree to 25 gravity and two-cent differential for 25 gravity. Top price, 25 gravity, 70 cents.

Richfield: 14 to 20.9 gravity 65 cents; 21 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity, 74 cents.

Elwood: 33 gravity 79 cents; 34 gravity 81 cents with differential of three cents for each degree upward. Top price, 36 gravity, 87 cents.

Newhall, McKittrick and Kern River: 55 cents a barrel.

Midway-Sunset, Elk Hills and Buena Vista Hills: 14 to 21.9 gravity 55 cents; 22 gravity 56 cents; 23 gravity 58 cents; 24 gravity 61 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 74 cents; 30 gravity 76 cents.

Los Hills: 14 to 20.9 gravity 55 cents; 21 gravity 57 cents; 22 gravity 59 cents; 23 gravity 60 cents; 24 gravity 62 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 67 cents; 28 gravity 69 cents; 29 gravity 71 cents; 30 gravity 72 cents.

Coalinga: 14 to 24.9 gravity 55 cents; 25 gravity 57 cents.

Wheeler Ridge: 55 cents a barrel.

Athens, Dominguez and Rosecrans: 24 to 24.9 gravity 69 cents with differential of two cents for each degree upward. Top price, 34 gravity, 89 cents a barrel.

Oklahoma, Kansas, North Texas (Effective Aug. 22, 1931).

Flat Prices.

Oklahoma: Cushing, Yale, Oklahoma City, Morrison, Wewoka and Seminole: 68 cents. **Cement, Duncan, Walters:** 60 cents; **Healdton:** 37 cents; **Hewitt and Graham:** 52 cents.

North and Central Texas: Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden: 68 cents; **East Texas:** 68 cents.

Gravity Scale Prices: Below 28 gravity 44 cents a barrel with differential of 2 cents for each degree beginning with 28 and ending with 40 gravity and above. Top price 70 cents a barrel.

Texas Panhandle: (Effective Aug. 22, 1931).

Gray County: Below 35 gravity, 46 cents with differential of 2 cents for each degree beginning with 35 and ending with 40 gravity and above. Top price 58 cents a barrel.

Carson and Hutchinson Counties: Below 35 gravity, 41 cents with differential of 2 cents for each degree beginning with 35 and ending with 40 and above. Top price 53 cents a barrel.

West Texas: (Effective Aug. 22, 1931.)

Crane, Upton, Crockett, Ector, Howard, Glasscock, Pecos and Winkler Counties, Texas, and Lea County, New Mexico, 35 cents flat.

Southwest Texas: (Effective Aug. 22, 1931.)

Refugio heavy oil 60 cents a barrel.

Refugio light oil—same as Gulf Coast (see below).

Gulf Coast: (Effective Aug. 22, 1931.)

Goose Creek, Hull, Liberty, Orange, Pierce Junction, Mykawa, Moss Bluff, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugarland, West Columbia, Humble and Refugio Light: Below 25 gravity 55 cents, with differential of 1 cent for each degree beginning with 25 gravity and ending with 35 and above. Top price, 66 cents a barrel.

Mirando: 60 cents; **Salt Flat,** 52 cents; **Darst Creek,** 52 cents; **Pettus:** 70 cents; **Markham:** 52 cents.

East Texas: (Effective Sept. 2) flat price, 68 cents.

North Louisiana and Arkansas: (Effective Aug. 22, 1931.)

Caddo, Homer, Haynesville, Bull Bayou, Sabine, Cricton, DeSoto, El Dorado, Cotton Valley, Sarepta, Cartersville: Below 29 gravity 44 cents with differential of 1 cent for each degree beginning with 29 gravity and ending with 40 and above. Top price 70 cents a barrel.

Smackover: 52 cents.

Rocky Mountain States: (Effective Aug. 22, 1931).

Salt Creek: Below 29 gravity 46 cents; 38 gravity and above 66 cents.

Elk Basin and Grass Creek: 90 cents; **Big Muddy:** 68 cents; **Lance Creek:** 105 cents; **Rock Creek:** 70 cents; **Sunburst:** 90 cents; **Osage:** 98 cents; **Cat Creek:** 65 cents; **Pondera:** 70 cents; **Hogback, New Mexico:** 72 cents.

Eastern States: (Effective Aug. 24, 1931).

Lima: 90 cents; **Indiana:** 60 cents; **Illinois:** 80 cents; **Princeton:** 80 cents; **Wooster:** $1.00; **Western Kentucky:** 75 cents.

Pennsylvania: (Effective Sept. 16, 1931). **Bradford District:** $2.25; **National Transit oil:** $1.95; **Southwest Pennsylvania Pipe Line oil:** $1.80; **Eureka Pipe Line oil:** $1.70; **Buckeye Pipe Line oil:** $1.60; **Corning crude:** 80 cents.

Michigan: (Effective Aug. 22, 1931). **Midland:** 73 cents a barrel. **Muskegon:** Same posting as Mid-Continent; 44 cents to 70 cents a barrel.

Canada: (Effective Aug. 24, 1931).. **Petrolia:** $1.80; **Oil Springs:** $1.87.

Repressuring is Discussed At Lufkin A. P. I. Meeting

Lufkin, Texas.—Discussion of the possibility of repressuring the entire East Texas field, with the major operators bearing the cash cost, was indulged in by engineers connected with a number of large oil companies during the meeting of the Southwestern district, A. P. I. division of production here.

It is possible that as a result of these informal discussions a survey of the possibilities and costs of this repressuring may be undertaken.

It was pointed out that the benefits to accrue from such repressuring in the way of water control, low production costs, natural gasoline recovery, etc., were sufficient to warrant those companies holding a major portion of the acreage to put up the money for such work.

In the event such a plan is found feasible it was suggested that the smaller companies now unable to participate in the cash outlay might amortize their part of the expense through the income derived from the sale of natural gasoline extracted from the gas produced by their wells—gas that is now escaping into the air.

Estimates of the cost of such an undertaking run as high as $10,000,000.

Independent Association Plans Meeting at Tyler, Texas, Soon

Fort Worth, Texas.—Pointing out that agitation for a protective tariff against imported crude oil will likely be a dominant feature of future activities of the Independent Petroleum Association of Texas, leaders in that organization are making plans for a semi-annual meeting of the group to be held in Tyler Monday, October 19. All elements in the industry are invited by officials of the association to join in the Tyler convention and in activities which may follow. It is stated that the association twice in the past joined other states in efforts to secure a tariff.

In connection with announcement of the proposed meeting at Tyler, Tom E. Cranfill of Dallas, president of the association, and Claude C. Wild of Fort Worth, vice-president, have issued a joint statement in which previous efforts and successes of the organization are reviewed and in which future aims are set forth. Following is the statement:

"The original program adopted by the association over a year ago for the correction of some of the evils of the industry in Texas has been practically completed. At that time there was discrimination between producers on the part of purchasing companies. The Common Purchaser Law was sponsored before the legislature and enacted. It had defects in that there were no funds for its enforcement and no adequate penalty for violation and did not apply to natural gas. These were remedied in a bill sponsored by the association at the called session this year.

"Small pumping wells were being curtailed to the danger point and the so-called 'Marginal Well' bill was submitted to the legislature and passed, which exempts small pumping wells from proration.

"In the meantime the statewide proration policy was adopted in Texas and the evils pertaining to potentials, and the system of umpires being employed by the majors arose. The association opposed them both and a law recently passed has eliminated the umpire system as then set up, and the recent order of the railroad commission in East Texas abolished the potential system.

"The pipe line charges in Texas have long been considered exhorbitant. Through an application to the railroad commission by the association and the sponsoring of the 'Pipe Line' bill during the special session the railroad commission on September 28 is to begin a series of hearings to equitably adjust these rates.

"The theory sponsored by some in Texas that we should only produce oil in accordance with some supposed 'market demand' set by certain interests has been defeated in both the regular and special sessions.

"Conservation in Texas henceforth, it is hoped, is on a sound basis, and represents that which is best for the resource itself in the various pools in the state.

"Realizing that prosperity is not usually created by legislation, but believing that these are sound reforms and will help to create equity in the future, we think now that the efforts during the next few months of all interested in the oil industry should be toward securing a tariff on oil and the protection of our domestic production against that of other countries. At the meeting in Tyler we shall so recommend to the board of directors."

Lone Star Is to Be First Gas Company Investigated

Austin, Texas.—Laten Stanberry, chief of the gas utilities division of the Texas Railroad Commission, has announced that Lone Star Gas Company will be the first investigated by his department in an effort to determine the fairness of rates in force by gas companies serving Texas.

Lone Star Gas Company has been selected because it is one of the largest gas companies operating in the state, and serves many North Texas cities which have filed complaints against gas rates with the railroad commission. Engineering firms are being invited to bid on the evaluation work, which will include the producing and distributing properties of the company. It is expected that the contract for this job will be let within two weeks, and that three or four months will be required to complete the survey. After completion of the survey, a hearing will be held in Austin and gate rates for the various cities served by the company will be set.

Officials of municipalities served by such public utilities have the power to reduce such rates to a reasonable basis, but the expense involved in gathering data on which the properties of the utility may be evaluated is greater than small cities can afford. At the regular session of the legislature $70,000 was appropriated to the gas utilities division for carrying on this work.

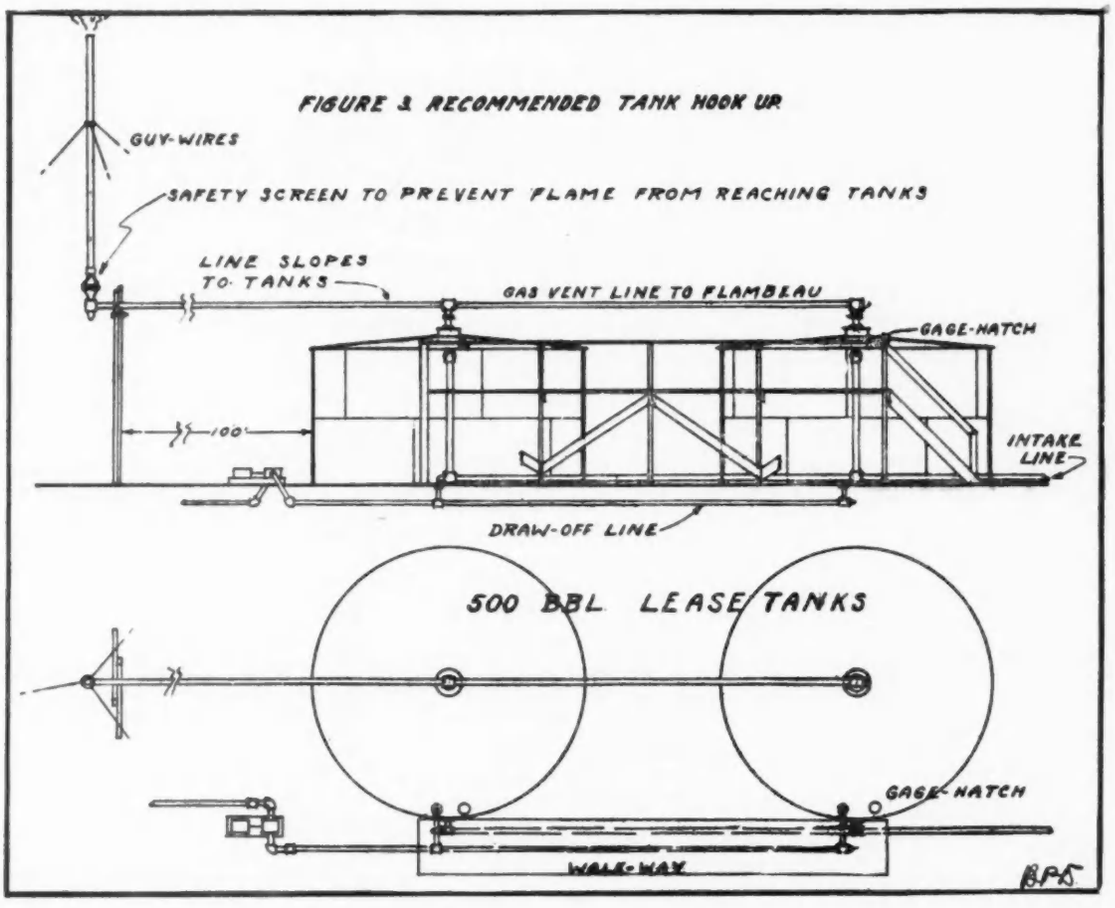
Mr. Stanberry stated that he expects that some of the companies will voluntarily reduce their rates as a result of this investigation, and it is possible that an inquiry into all companies will not be required.

Longview, Texas.—Crude oil stocks in East Texas as of September 20 had climbed back to a total of 3,185,813 barrels, according to a survey made by scouts, with available storage room of 5,234,687 barrels. These figures include the Van field, which accounts for 448,709 barrels of the crude stocks, and also tanks ranging down to 5000 barrels in capacity. There are approximately 955,000 barrels of new steel tankage under construction in the district. The increase in crude stocks in the district lately has been partially due to normal crude movements being held up to await the completion and regular operation of new trunk lines.

El Dorado, Arkansas—Wilson and Chapman, who have some production in the Urbana district of Union County, Arkansas, are clearing ground for a 10-car loading rack to be built adjacent to their production, which is located in the north offshoot of the field in Section 3-18-13.

Correct and Incorrect Producing Practices in East Texas

(*Continued from page* 20)



delivers it through the treating system. All recoverable oil is saved in this manner and all free water can be drawn off at the gun barrel. This keeps the inside of fire walls clean and free from fires.

General Production Equipment

There has been a tremendous quantity of non-standard material shipped into East Texas; there are also great quantities of second-hand material of every sort and description shipped in from other fields. It is realized that this material has been used to economize and possibly most operators are guilty in some degree. The use of old, non-standard material, invites future trouble in a good many cases and the desirability and necessity for specifying A. P. I. standards on all classes of equipment should be emphasized whenever and wherever possible. This applies particularly to such material as tubing, sucker rods, working barrels and tanks. The A. P. I. specifications provide for interchangeable threads which will be of tremendous advantage, particularly in cases of emergency. The use of A. P. I. standards will also result in very substantial savings in replacement costs. Most of the supply houses now stock A. P. I. equipment. Specifying A. P. I. standards as a general practice will insure a ready source of supply of standard material in any field. An additional advantage in using A. P. I. standards is that many of the A. P. I. specifications provide for minimum grades of quality which will insure material of known grades and strength and reduce mechanical failures.

There has been some misunderstanding in the East Texas field about the A. P. I Standards on Bolted Tanks. At Chicago last December this specification was changed to a tentative status for the purpose of making certain refinements in the specification which were needed in order to insure interchangeability of staves. The fact that this specification was made tentative did not in any way remove it from the list of A. P. I. standards except that the Institute withdrew the right to use the monogram on tanks made to this tentative specification. This situation has since been cleared up; the specification was revised at the mid-year meeting of the Division of Production held in Dallas last June, and the revised specification has since been printed and circulated to all tank manufacturers who are licensed to use the A. P. I. monogram, and their right to use the monogram has been reinstated. The main difference between the old and new specification is that the new revised specification provides for a finished interchangeable stave instead of the flat sheet lay-out as given in the old specification. The fact should be emphasized that no change has been made in the original bolt circle or in the general sizes, all the changes being in the nature of refinement.

EDITORIALS

Who's to Blame?

STATISTICALLY the oil industry is in a position where a crude price increase should be forthcoming. Few will deny that. Most people with whom we have talked—people connected in an official way with some of the companies having to do with the fixing of the crude prices—have agreed that "normally" such a statistical situation as the present one would justify an immediate price increase.

But it appears that more reasons can be advanced as to why the oil producer cannot get more for his product than the well known Mr. Carter had oats.

"With other products down, the oil man cannot logically expect an increase" one says. And why, in the name of common sense? Shall everything remain at a price level where all lose money, just because the price cannot be raised on all things simultaneously? The idea is absurd. And as a second thought, hasn't the oil producer suffered more than his share in this price reduction anyway?

One thing most of our friends seem agreed on is that the price of crude cannot go up until the refinery or retail price of gasoline ascends also, and one man, an official of a great oil company, which in effect fixes the price of gasoline to the retail trade for probably a fourth of the nation's consumption is reported to "think" that it would be unwise at this time to raise the price of gasoline because the car owner is having a hard time getting the money to buy gasoline at its present price.

No one can deny that the public is to be served—and considered to the fullest extent, but the foregoing statement of this great oil company executive sounds strangely hollow to us. Maybe it is because we see that company for the first time sounding the trumpets and changing the cymbals for the poor car owner. Maybe it's because we think that there is a possibility that the real reason might be a "squeeze play".

That the independent refiner cannot produce gasoline at a profit at his refinery at present wholesale prices is a fact that cannot be denied, and some sources of supply for the independent petroleum jobbers have found the shoe pinching to the point where they cannot operate.

"Why not raise the price at the refinery?" we are asked.

"My customers are having to sell on a basis of a gasoline price that they do not fix and as long as the retail price stays where it now is in one of the nation's greatest market sections, they must either buy at the present tank car prices or lose money," we are answered. "And if they cannot or will not pay more we must operate at a loss or shut down."

And so the producer gets it in the neck.

Somebody Is a Cock-Eyed Liar!

MAYBE the above head isn't dignified, but at least it's expressive.

We folks who work on THE OIL WEEKLY and the other publications owned by The Gulf Publishing Company have been accused of being owned by so many people that we have decided that it is time to declare our parentage!

First, we want to say that the publisher of THE OIL WEEKLY, Ray Dudley, the majority stockholder, whose home is in Houston, fixes the editorial and other policies of The Gulf Publishing Company in conjunction with the other members of the company's staff.

But human nature, running true to form, is disposed to find something back of some editorials besides the common sense that we have tried to put into them.

So one major company immediately accuses us of being owned by Standard Oil Company and another accuses us of being owned by Gulf Refining Company. While up in Louisiana we had a great deal of trouble in convincing a friend that a certain well known independent operator in Houston does not own the company lock, stock and barrel.

In Fort Worth a short time ago a geologist, whom we hope is better informed on his geology than he is on his Gulf Publishing Company ownership, offered to bet that Gulf Oil Corporation or some subsidiary owned us. We're trying to get his last address to call the bet but you know a lot of geologists as well as a lot of other good folks have lost their permanent addresses recently.

The truth of the matter is that we folks who work on THE OIL WEEKLY own more than 76 per cent of the voting stock in the corporation and 100 per cent of the non-voting stock, and if any of us owe anybody for our stock it is because we have gone to the bank and borrowed money to buy every share that was offered for sale by anybody!

The fact that the names of some officials of a major oil company appear on the sworn ownership list of The Gulf Publishing Company (which we are required by federal law to publish every six months) is no indication that they or their company own or control Gulf Publishing Company. Most of them became stockholders when they were prominently connected with the Gulf Coast Independent Oil Producers' Association. These officials actually own about seven per cent of

A Stupendous Engineering Feat!

Across the Mississippi by special engineering measures, and over several other rivers by multiple-line construction, a great project that is to make natural gas flow from wells in the Texas Panhandle to Indiana, is taking its way through five states.

The Panhandle-Eastern Line, a joint enterprise of the Missouri-Kansas Pipe Line Co. and the Columbia Oil and Gasoline Corp., will carry a tremendous volume of fuel gas over all this distance and serve numerous communities along the way.

Considering canyons, river-crossings and stretches of rough country, it was an extraordinary achievement to complete within seven months all that part of the line extending from the Panhandle to the Mississippi. The whole enterprise now nearing completion, involving more than 1100 miles of pipe, is regarded as one of the most noteworthy feats of engineering ever undertaken for the gas industry.

It detracts nothing from the efficient organization and the skill employed, to say that the character of the pipe used contributed materially to make possible such an accomplishment. Widely adaptable, workable, easily handled, of remarkable strength and durability, NATIONAL Pipe features in this as in other outstanding projects, confirming its rank as—*America's Preferred Line Pipe.*

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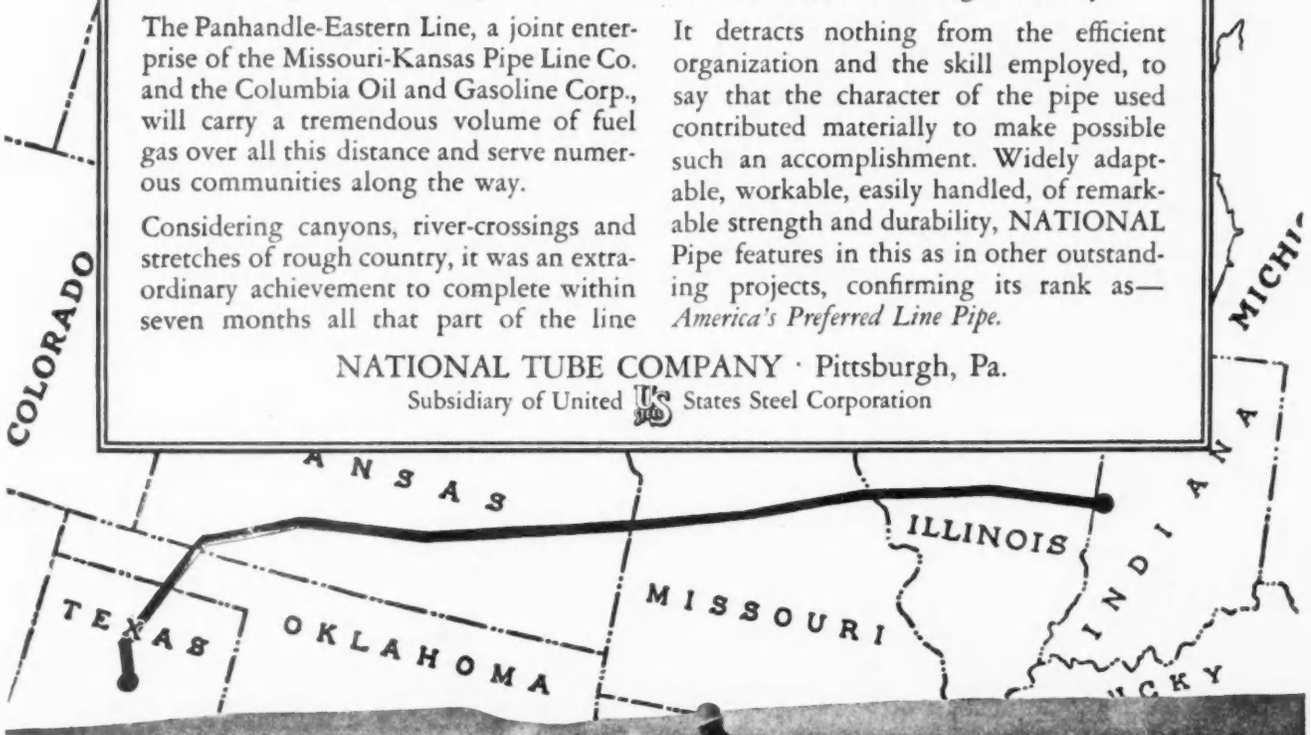

NATIONAL PIPE

our stock. The remainder is owned by various individuals who became stockholders from 10 to 15 years ago.

While these "oil company, outside stockholders" have never at any time attempted to control the policies of Gulf Publishing Company, we do not say this in apology. We are proud to have them as stockholders and judging by the way some of them have held on to their stock, they are not ashamed of it. We have gone to them for advice on occasions and will do so again, just as we go to other operators, rabid, dyed-in-the-wool independents, and ask their advice. We do not pretend to have all the brains in the world; but we do have enough stock in our company to run it—and some to spare.

So if you hear anybody on the witness stand or otherwise, offer some inside information as to some corporation or corporation's officials owning The Gulf Publishing Company, or controlling it in any way, and if they are willing to back up their inside information with their money, just hold them until we can get on the phone, and you will get a commission on their money. We are not betting for a living, but these be strenuous times, and we'll take a cinch bet any time!

Umpire's Resignation Causes Confusion at Oklahoma City

Oklahoma City.—Considerable confusion has existed in regard to proration machinery in the Oklahoma City pool during the past week. Following a meeting of the operators' committee on Wednesday, September 23, Judge W. N. Stokes, chairman of the committee, announced the resignation of Otto Bradford, who organized the umpire's office in October, 1929, and has acted in that capacity since that time.

The committee went before the corporation commission on the following day transmitting Bradford's resignation and asking that an accounting be made of records in the umpire's office as well as a comparison between the production as reported to the umpire and to the state tax division. The commission refused to recognize Bradford's resignation, holding that he is a state employe although his salary and office expenses are paid by the operators. It was further held that the umpire's records are state property and could not be investigated except in co-operation with the corporation commission.

After several conferences a committee of five operators was named late Friday to make an audit of the records and a comparison with figures reported to the state tax division. The committee is composed of B. G. Patton, Plains Petroleum Company; C. O. Rison, Indian Territory Illuminating Oil Company; J. S. Anderson, Anderson-Prichard Oil Corporation; Frank Porter, Wirt Franklin Petroleum Corporation, and W. N. Stokes, T. B. Slick interests. The operators' committee, of which Stokes is chairman, named three members of the special committee and the corporation commission added the names of Stokes and Patton. In the meantime Bradford remains as umpire for the Oklahoma City pool, a position which cannot be readily filled. It is expected that irregularities will be found in comparing production as reported to the umpire and that reported for state production purposes.

Naming of the committee brought to a close the temporary disagreement which threatened to overthrow the proration organization which has been developed through two years of experience. Had the operators withdrawn support, enforcement of the state's orders would have reverted directly to the corporation commission, which is without funds to provide a state-paid umpire and the necessary assistants.

Demands that the Oklahoma City pool be partially opened are coming from all directions. With production consistently running below 10,000 barrels daily since August 5, only one of the many small refineries that sprung up in Oklahoma City is now in operation. Black Gold Refining Company, whose plant is located on the southwest edge of the field, continues to run 800 to 1000 barrels daily through an arrangement with Coline Oil Company, whose 85,000 barrel storage tank is located adjacent to the refinery.

Proration Enforcement Aids East Texas Skimming Plants

Longview, Texas.—Rigid enforcement of proration restrictions by military authorities in the East Texas field is reacting in favor of the numerous skimming plant owners in the area to the extent that a ready market is now available for all fuel oil produced and in storage at prices ranging from 30 to 50 cents per barrel at the plant. During the period of semi-wide open production this same fuel oil was going begging at five and 10 cents per barrel, as operators of drilling rigs then could obtain adequate supply of natural gas at a nominal rate; or crude was so cheap that the extra volume consumed was immaterial.

The field is now riding the crest of its greatest drilling activity, and with all wells pinched to 185 barrels daily there is not sufficient gas to fire the boilers of the drilling tests. But for this unexpected arrival of a brisk fuel oil market locally, only a few of the 17 completed plants would be able to carry on under a 60-cent crude market price, which is prevailent throughout the field, except when old contracts apply.

Late last week only 12 plants were operating, and nine of these were consuming less than 1000 barrels daily each. Most plants in this area are topping off about 16 gallons of gasoline per barrel, with the remainder going as fuel oil. This gasoline is netting the plant owners slightly less than three cents per gallon. To continue operating on crude at posted price it was imperative either that a greater return be obtained from the fuel oil, or the efficiency of the plant be improved.

Tariff Commission to Hold Hearing on Cost of Crude

Washington, D. C.—A public hearing on costs of producing crude oil and refined products in the United States and in the principal competing foreign countries will be held by the tariff commission October 29, in connection with its investigation under a resolution adopted by the House of Representatives last session.

This is the second investigation of oil to be made by the commission, a report having been made on the subject last year to the senate in which it was shown there is a difference in cost of Mid-Continent and Venezuelan crude at the principal Atlantic seaboard markets of $1.19 per barrel in favor of the latter.

The house resolution was introduced by Representative Garber of Oklahoma.

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Vital Problems to Be Discussed At A. I. M. E. Meeting

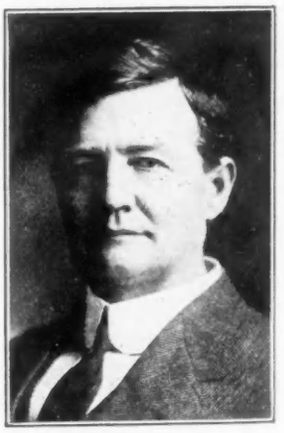
Houston.—Unusual interest is attached to the program of the fall meeting of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers, opening its two-day business sessions here on October 2. The many subjects scheduled for discussion are particularly important at this time because they deal with vital problems confronting the industry in every section of the country. Because of its widespread interest in oil circles, East Texas heads the list of important problems to be discussed. F. H. Lahee, chief geologist, Sun Oil Company, Dallas, Texas, is expected to present a real contribution to the industry in his paper, "Geology, Development and Engineering—East Texas Oil Field." Another angle of the East Texas situation is the authority of the state to regulate production and conflicting recommendations from the industry as to what limitations should be placed on that field. These highly pertinent subjects are to be discussed by such authorities as Fred Upchurch, assistant attorney general of Texas, and C. V. Terrell chairman of the Texas Railroad Commission.

"Stabilizing Influences for the Petroleum Industry," by Earl Oliver, of Ponca City, Oklahoma, is expected to result in considerable constructive discussion. In line with discussion on the merits of unit operation will be another important paper by R. S. Christie, petroleum engineer of Amerada Petroleum Corporation, Hobbs, New Mexico, concerning the maintenance of reservoir pressures in the Hobbs field. "The Relation Between Gas Energy and Oil Production," will undoubtedly furnish added information of a technical and engineering nature on the highly important subject of pressure maintenance in oil producing areas. This paper will be presented by Professor B. B. Boatright, of the Colorado School of Mines, Golden, Colorado. "The Determination and Application of Depth Pressures in the Yates Field" is expected to bring out some valuable information for engineers who have given serious study to this subject. This paper will be presented by Dale Nix of The California Company, Midland, Texas.

The importance of salt domes, particularly those found in the Gulf Coast, will be treated by Wallace E. Pratt, Humble Oil & Refining Company, Houston. His paper is entitled "Salt Domes for Engineers." Other important engineering subjects to be discussed cover design of flow strings, flowing wells with small tubing, advantages of flowing wells through tubing, recent developments and use of bottom hole chokes, experimental study of pressure gradient within oil sands. Saturday afternoon is to be devoted to a symposium on local practices and is expected to develop discussion of practical oil field operating methods.

The committees in charge of the program also have arranged an unusual program of entertainment at the smoker to be held on Friday evening at the Lamar Hotel. Prominent men in the industry are scheduled to put on a "show"

SPEAKERS ON



C. V. Terrell
Chairman Railroad Commission of Texas, Austin

"Conflicting Recommendations from the Petroleum Industry"

Wallace E. Pratt
Humble Oil & Refining Company, Houston

"Salt Domes for Engineers"

Frederic H. Lahee
Sun Oil Company, Dallas

"Geology, Development and Engineering of the East Texas Oil Field"

Earl Oliver
Ponca City

"Stabilizing Influences for the Petroleum Industry"

J. S. Ross
Southern States Company, Shreveport

"Recent Developments and Use of Bottom Hole Chokes"

that will live long in the memories of those who attend. Sunday will be spent visiting the Sugarland oil properties of Humble Oil & Refining Company and the sulphur properties of the Texas Gulf Sulphur Company at Boling, Texas. Luncheon will be furnished to delegates at Boling through the courtesy of Texas Gulf Sulphur Company. Special busses have been provided for to take care of all who desire to visit these interesting properties on Sunday.

An early check of advance reservations indicates that a considerable number of prominent engineers will be present at this meeting and are expected to take an active part in the various discussions. Estimates of probable attendance point to a registration on the opening day that may exceed 150 delegates.

A.I.M.E. PROGRAM

FRED UPCHURCH
Assistant Attorney General, Austin

"Authority of the State to Regulate Production"

Engineering Subjects on A. P. I. Chapter Meeting

Los Angeles.—The San Joaquin Valley chapter of American Petroleum Institute met Tuesday night, September 15, with an attendance of 85, to review recent developments in the oil industry.

J. J. Wilt discussed economic conditions and stated that the present depressed conditions in the oil industry were the result of a number of factors including crude oversupply, subnormal consumption of refined products, increased supply of high gravity crude, and increased refinery recoveries.

J. R. Thomas, North American Oil Consolidated, Taft, California, discussed: "Late Trends in Drilling." He pointed out the fact that improvements in heat treating and alloying of steel have greatly strengthened casing and drill pipe, thereby permitting deeper drilling.

"Gas Utilization" was discussed by F. S. Burt, General Petroleum Corporation. He pointed out the percentages of consumption of gas production and said that many new markets are being developed for by-products.

E. H. Todd, Standard Oil Company, Bakersfield, described the improvements which have been made possible by the adoption of the code of ethics. Vice Chairman P. C. McConnell discussed "Production Practices," and discussed many innovations such as bottom hole beaning, graduated tubing, etc. Secretary-Treasurer M. W. Morris discussed improvements in "Gas and Oil Pipe Lines." He called attention to the fact that welded pipe line construction made possible transportation of gasoline by pipe line.

It was announced that election of officers will be held at the November meeting.

DALE NIX
The California Company, Midland

"Determination and Application of Depth Pressures in the Yates Field"

BYRON B. BOATRIGHT
Colorado School of Mines, Golden

"The Relation Between Gas Energy and Oil Production"

R. R. HAWKINS
The Texas Company, Tulsa

"Flowing Wells with Small Tubing"

HALLAN N. MARSH
General Petroleum Corporation, Los Angeles

"Advantages of Flowing Wells Through Tubing"

Personal Mention—Men You Know

▼ ▼ ▼

JOHN M. VETTER has been placed in charge of the geological department of Rio Bravo Oil Company, Houston, following the resignation of Professor Charles Laurence Baker, who is now doing special work for the Bureau of Economics Geology of Texas.

JOHN M. VETTER

Vetter was graduated with an A. B. degree from the University of Nebraska in 1922, having majored in geology, after his educational training was interrupted by service with the U. S. G. S. in Oklahoma and enrollment in the air service of the U. S. Army. He joined the geological department of Mexican Eagle Oil Company in Mexico following graduation, and in 1924 entered the service of Rio Bravo Oil Company, in the land and geological department and worked up to the position of superintendent of the land and tax department. He left active service of the company October 1, 1928, to enter consulting work with W. F. Bowman but was retained in an advisory capacity. Vetter is a member of Sigma Gamma Epsilon Society and has served four years as district representative on the business committee of the A. A. P. G. for the Houston district. He was also secretary and treasurer of the Houston Geological Society for two years and vice president for one year.

Professor Charles Laurence Baker first entered the service of the Southern Pacific interests (of which Rio Bravo Oil Company is a subsidiary) in 1912, working intermittently in different divisions and localities, becoming chief geologist of Rio Bravo Oil Company in July, 1926. During the times he was not actively connected with Rio Bravo Oil Company he was employed by the University of Texas, Standard Oil Company of California, Marland Oil Company, and others.

P. H. O'NELL, prominent in early California oil history, has been elected a director of Wellington Oil Company.

DR. W. R. CALVERT, San Antonio petroleum geologist, has gone to Cuba, where he will be engaged in research work for the next 60 days at least, for New York and Texas oil interests. His headquarters will be at Pinar Del Rio. Dr. Calvert for years has been connected with the United States Geological Survey and until recently was chief geologist for Grayburg Oil Company.

H. J. FLYNN, driller with Indo-Burmah Petroleum Company, Ltd. of Lanywa, Upper Burmah, is on holiday at San Mateo, California.

FRANK A. MORGAN, chief geologist for Rio Grande Oil Company, was the principal speaker at the fall and winter meeting of the Petroleum Accountants Society of Los Angeles, held September 24.

RALPH M. WEAVER, JR., 34, president, Falcon Company and also a consulting geologist with extensive holdings in East Texas, was fatally injured in an automobile accident near his home in Fort Worth on the morning of September 25. He was a graduate of the Colorado School of Mines, and saw service in France during the World War as an officer in the 341st. field artillery. Prior to the launching of activity in East Texas last fall, Mr. Weaver had been identified with a number of operations in Central West Texas.

HANS GUDE, formerly engineer for Pacific Western Oil Company in the Elwood field, is now connected with the Kettleman North Dome Association at Kettleman Hills.

EUGENE BUNESCU, production superintendent for Concordia Company of Roumania, sailed from New York last week, returning home after a six months' tour of the oil fields of the United States.

O. MILNE, chief engineer of Peabody, Ltd., of London, has returned to England after an extended sojourn with the organization of Peabody Engineering Company.

Group attending the Southwestern District Meeting of the Division of Production, American Petroleum Institute, Lufkin.

CARL G. CROMWELL, 42, pioneer West Texas operator and president of Apollo Oil Company, with headquarters at San Angelo, Texas, was fatally injured in an automobile accident on the night of September 27, near Sheffield, Pennsylvania, while en route Kane, Pennsylvania, to visit relatives. Cromwell was the lone driller on the discovery well of the Big Lake field, which was the first important oil strike made in West Texas, and later was largely responsible for the discovery of the 8500-foot oil and gas horizon in this same field. He was only recently elected president of Apollo Oil Company. Cromwell is survived by his wife and one daughter.

CHARLES A. MUNROE of New York City, president New York Oil Company and North Central Gas Company, visited for a short time in Casper recently before making a trip of inspection over his companies' new gas line project which furnishes towns in eastern Wyoming and western Nebraska with natural gas for fuel. He was accompanied on his trip by J. M. McIntire, vice president of both companies.

CHARLES R. ("Chuck") RIDER, general manager of Drilling and Exploration Company, diamond drilling contractors of Maracaibo, is looking over the East Texas fields.

CHESTER CREBBS, general agent (general manager) for Venezuela Gulf Oil Company, sailed from New York last week returning to Maracaibo after an extended vacation in the United States.

S. P. MULLEN, general manager, Merchants Petroleum Company of Los Angeles, and L. C. Chappuis, consulting geologist, are investigating leases in Idaho, with the view of entering the district.

EARNEST SIDWELL, formerly in charge of Prairie Oil & Gas Company's Los Angeles office in the Roosevelt building, has moved his office to 1319 Holmby street, West Los Angeles.

ALICE M. O'DEA recently completed 25 years' service with Union Oil Company of California, having been the first woman to round out a quarter of a century with the company. J. M. Rust, treasurer, and Thomas M. Bolton of Vancouver, B. C., also finished 25 years' service.

JOHN A. RITTER

JOHN A. RITTER, superintendent of drilling and production for Sun Oil Company, with headquarters in Dallas, Texas, was among those taking a leading part in the recent meeting at Lufkin, Texas. He is secretary of the Southwest district, American Petroleum Institute division of production, which held its fall meeting at Lufkin on September 24 and 25.

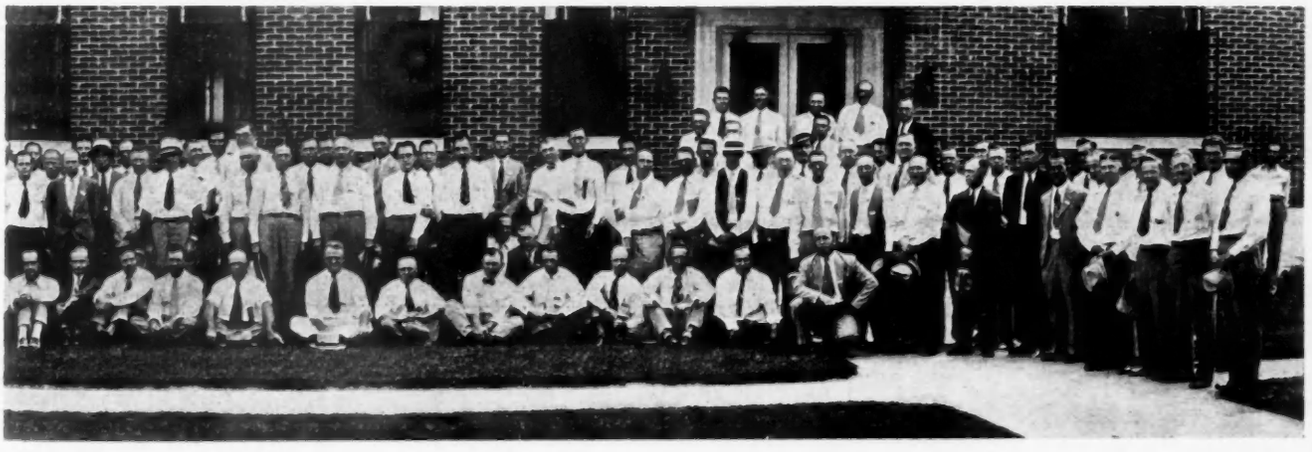
He has been with the Sun Oil Company for about eight years, and during all that time he has worked out of the Dallas office, although having been stationed for periods in other districts. During such periods he spent several months in California fields.

Mr. Ritter was born and reared in Denver, Colorado, and was graduated in electrical engineering from the University of Colorado at Boulder in 1909. He then spent about 10 years in the service of General Electric Company, doing considerable work in its factories in the East and coming to Texas for the company in 1913. After his experience with this company he went into business for himself, and he was engaged in a machinery and contracting business immediately before becoming associated with Sun Oil Company.

D. R. BROWN, vice president, O. C. S. Manufacturing Company, Coffeyville, Kansas, recently toured the Rocky Mountain region on company business, visiting among other places the new activity on Greasewood dome in Colorado.

HORACE FITZPATRICK, assistant general manager, Prairie Oil & Gas Company, has returned to company headquarters at Independence, Kansas, after a trip through the Rocky Mountain states where the company has extensive holdings which recently have been augmented.

W. H. ESSER for several years superintendent of automotive equipment for Shell Petroleum Corporation in the Gulf Coast division, has been moved to Cleveland, where he becomes superintendent of automotive equipment for the Ohio division of the company.



Texas, September 24-25, 1931. Photograph taken in front of the general offices of Lufkin Foundry & Machine Company

Oil and Gas Pipe Line Activities

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Three Groups to Operate New East Texas Carrier

Houston.—Information was not available in Houston on September 29 as to the final arrangements made by The Texas Corporation, the Henry L. Doherty interests and Tidal Refining Company on ownership and operation of their new 206-mile 12-inch oil pipe line from the East Texas field to Port Arthur on the Gulf Coast, although it was reported that the Tidal interests had become definitely identified in the project.

With the Tidal group scheduled to be a part owner in the system along with the other two units, it appeared likely that a new company would be organized to represent the combined interests in operation of the large pipe line. When plans for construction of the line were first announced The Texas Corporation and the Doherty interests were the only groups definitely interested in it, and it was considered probable that the project would be made an additional property of The Texas-Empire Pipe Line Company. Construction of the line was carried out under supervision of The Texas Pipe Line Company, and the line and related facilities have constituted properties of that concern, technically, pending consummation of plans for their operation.

While the pipe line will have capacity of 75,000 barrels per day, it appears quite likely that there will not be sufficient crude available from the East Texas field under the existing conservation program for the system to be operated at or even near capacity for any sustained period. No information was available early this week as to the daily volume of oil the carrier will likely move initially, or as to the proportions of ownership in it by the three parent concerns.

The 35-mile section from Sour Lake station to Port Arthur, tidewater terminus of the pipe line, was scheduled to be tied in and ready for testing on Thursday, October 1, bringing to conclusion the rapid construction work on the carrier. The long stretch of line lying north of Sour Lake and extending to Nettleton station north of the Sabine River in Gregg County had been completely welded and tied in on September 20, and since then most of it has been tested with water, and portions have been lowered into the ditch and covered. The welding work on that long northern section of somewhat more than 170 miles was started on August 21, and it was consequently completed within total elapsed time of 30 days. The work on the 35-mile Sour Lake to Port Arthur section, however, was slowed down because the right-of-way lay through irrigated rice farms necessitating construction operations upon wet lands.

Clearing of right-of-way of the 12-inch pipe line was started August 8, 1931, by the first crew which went into action, and the first pipe arrived on the scene August 18, on which date the first pipe was strung also. Welding was started simultaneously by three crews on August 21.

Eight complete construction crews were employed in laying the line, contracts for the work having been awarded to three separate companies. Gregg Construction Company of Longview built 43 miles of line at the northern end of the system, employing two full construction crews and using acetylene welding. The remainder of the system was electric welded, Apex Construction Company of Lufkin, Texas, building 85 miles in the middle section of the system through efforts of four complete construction gangs, and N. A. Saigh Company of San Antonio laying 78 miles at the south end of the line by employing two complete crews.

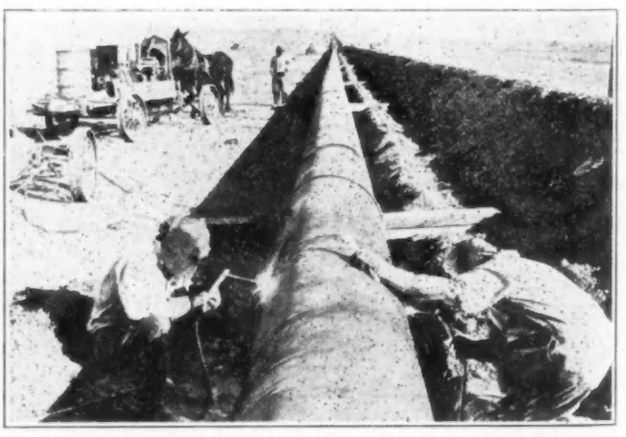
Six pump stations have been erected along the system, each equipped with centrifugal pumps driven through speed-increasing herringbone gears by Diesel oil engines.

Stanolind Starts Building Parallel Line Near Mexia

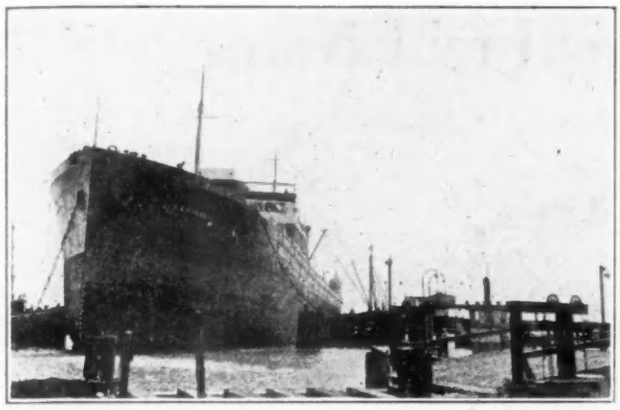
Mexia, Texas.—Construction of seven miles of eight-inch line parallel to an existing eight-inch trunk line has been started by Stanolind Pipe Line Company from its Bullock tank farm to main line station near Mexia in order to facilitate the northbound movement of East Texas crude. Approximately 25,000 barrels of East Texas crude, representing about 9400 barrels of controlled oil held in the field by Stanolind Oil & Gas Company, with the remainder purchased by Stanolind Crude Oil Purchasing Company, is being received daily at the Bullock tank farm. Humble Pipe Line Company is gathering and delivering this crude to the tank farm for 20 cents per barrel.

Stanolind interests have a contract to deliver 10,000 barrels of Mid-Continent crude daily to Sinclair Refining Company at Houston, and are making shipments from storage oil held at the Bullock tank farm. This pull on stocks is being offset by East Texas crude replacements, while the surplus East Texas crude receipts are being moved into the Mid-Continent and points further north.

Upon the completion of the second Bullock-Mexia pipe line unit, Stanolind Pipe Line Company will be able to make daily shipments of the two grades of crude to north and south destinations without interruption. The company has salvaged about 14 miles of eight-inch trunk line in the Corsicana-Powell area that has been idle for months, and will use a portion of same in the new unit.



Two operators simultaneously arc welding with the shielded arc tie-in welds on solid electric welded 26" gas line for the Southern Fuel Company from Kettleman Hills to Los Angeles, California. Welding by the Welding Engineering Company, Bartlesville, Oklahoma, using gas engine 'Stable Arc" welders and "Fleetweld" electrode manufactured by The Lincoln Electric Company, Cleveland, Ohio.



The new $100,000 oil loading docks built by the Gail Borden Munsill interests at Port Aransas was formerly opened July 21 when the J. C. Donnell, above, largest of Atlantic Refining Company's fleet lifted a cargo of 125,000 barrels. The dock is equipped with electric hoists, pumps and other accessories to promote speed and safety in loading and is claimed to be one of the finest plants of its kind in the country.

Commission Postpones Pipe Line Hearing to Later Date

Austin, Texas.—A bill of exception filed by the North Texas Oil & Gas Association at the opening of the pipe line rate hearing before the Texas Railroad Commission here Monday, September 28, was sustained by the commission and terminated the hearing.

The bill took exception to the notice of hearing, the method by which the commission proposed to fix temporary rates, and contended that it was possible that the fixing of rates by the proposed method would prevent the petitioners from receiving reparations or rebates through the courts, should the temporary rates fixed by the commission later be found to be too high.

The commission took the petition under advisement and then announced that no further effort would be made to hear evidence on which temporary pipe line rates would be fixed, and that a new notice of hearing would be issued at a later date. Chairman Terrell stated that the question of rules and regulations for the operation of oil pipe lines would be taken up in the afternoon.

At the opening of the afternoon session, it was found that the question of rules and regulations for the operation of the lines was so involved with the question of rates that it would be impossible to consider this question until the rate question also might be discussed.

C. C. Wild, executive vice-president of the Independent Petroleum Association, which has a case before the commission in which it has requested that pipe line rates be reduced by 50 per cent, requestion the commission to require the pipe line companies to produce their books and turn them over to the commission in Austin for the benefit of the commission and any interested party who might desire to peruse them. He requested that they call for records of these companies for the past 10 years.

Harry Pennington of San Antonio requested that the commission also require the pipe line companies to file their tax valuations of their properties for every county in the state in which they operate, to assist the commission in fixing rates.

Judge Lawhorn of The Texas Company and Judge Townes of Humble Pipe Line Company both protested against such a request. They objected to turning over their records to the opposition, and insisted that the tax assessments could not be considered by the commission in fixing rates for the operation of the pipe lines.

This matter was also turned over to the commission for consideration and will be ruled on at some future date.

It was then proposed that the matter of fixing rates and enforcement of the common purchaser gas act. A system of rules was presented for consideration by Mr. Harrington, an independent gas producer of Amarillo, and were discussed at some length. It was finally determined that a round table discussion of the matter would be the simplest way for all parties to agree on rules which they would suggest to the commission, and with Laten Stanberry, chief of the gas utilities division acting as chairman, all parties retired to a private room for this discussion.

Apparently, many of the gas companies were not aware of the fact that the question of control of gas pipe lines as common carriers would be brought up at this hearing. The notice was indefinite on this question, and few were present.

Gas Line From Jackson to Hattiesburg, Progressing

Jackson, Miss.—Public Service Corporation's eight-inch gas line from Jackson to Hattiesburg, Mississippi, 90 miles south of here, is making good progress. The entire right-of-way has been purchased, 99 per cent of it cleared, 60 per cent of the ditching done, 70 per cent of the material received, 40 per cent of the line laid and tested and 70 per cent of this welded. Of a 30-mile gas distribution system to be laid in Hattiesburg approximately 15 per cent of the entire project is completed, 75 per cent of the material has been received and 25 per cent of the pipe strung, a recent progress report indicated.

Long Beach-Kettleman Hills Gas Line Nears Completion

Los Angeles.—Southern Fuel Company is completing the most difficult leg of its 210-mile Long Beach-Kettleman Hills natural gas line and will soon double the capacity of carriers between the San Joaquin valley and Los Angeles basin. The Ridge Route section is being completed, with the small portion near Grapevine remaining to be finished. This is one of the largest natural gas lines of any length ever laid and will supply power plants and other industrial enterprises in and near Long Beach.

The United States Department of Commerce, Bureau of Standards, has issued research paper No. 329 entitled "Soil-Corrosion Studies, 1030, Rates of Corrosion and Pitting of Bare Ferrous Specimens," by K. H. Logan and W. A. Grodsky.

This report tells of the results of the examinations of specimens of ferrous materials removed from 70 test locations. The paper reports that the extent of the corrosion depends largely on the character of the soil. Rates of corrosion appear to vary somewhat from year to year, but the general tendency, it was found, is for the rate to decrease as the time of exposure increases.

Data collected do not show that there is one best pipe material regardless of soil conditions, as the material which appears best in one soil may appear inferior in another soil. Supplementary tests, according to the findings of the examinations, indicate that at least a number of soils have characteristic corrosive properties which can be expected wherever those soils are found.

The paper is for sale by the superintendent of documents, Washington, D. C. The Price is 10 cents.

Oklahoma--Kansas Field Notes

FLOYD SWINDELL, ***Staff Representative, Tulsa, Oklahoma***

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Development in Kansas Continues at Low Level

Wichita, Kansas.—Development in Kansas continued at a low level during the past week when wildcat activity was restricted to 13 tests and only two wells were added to the Ritz-Decker-Garrett area of McPherson County. Daily production for the state averaged 107,690 barrels for the week ending Saturday, September 26. Of this amount Ritz-Decker-Garrett produced 17,540 barrels, restricted to 10 per cent of the unit potential.

Purchasers in this area are having difficulty in securing sufficient oil to take care of the demand and it is likely that allowable production will not be held to a low percentage for many weeks regardless of the failure to post higher price schedules. Potential on some of the water producing chat wells is down to the extent that several properties are allowed less than 100 barrels daily production and all combination wells in the Decker gas field whose potentials have been set at 50 barrels in lieu of actual gauges, are restricted to five barrels daily.

Continental Oil Company's Black 1, CSW SE NW Section 16-25s-1e, old chat producer deepened to the Viola lime in the Goodrich pool, pumped 250 barrels in 12 hours during the past week, Viola lime was logged from 3333 to 3337 feet and it is possible that the well may be drilled deeper. A trace of salt water was encountered while bailing but none has shown up during the pumping test. This may mean that some water had accumulated in the hole prior to securing a shut off and that the hole can be safely drilled deeper.

Ritz-Decker-Garrett

Youker et al's Lagree 1, CSW NW Section 7-19s-1w, one mile east of production in the Decker gas field, encountered Viola lime at 3442 feet and had the pay zone from 3444 to 3448 feet. When drilling was discontinued the test looked favorable with 3300 feet of oil standing in the hole. After swabbing 52 barrels of oil in one hour and 10 minutes, water showed up and the hole is now standing full of fluid, about 75 per cent water. This test, apparently located well down on the northeast limb of the Decker structure, encountered top of the chat horizon at 2927 feet, only one foot structurally lower than McPherson and Shell Petroleum Corporation's Wallace 1, CSW Section 12-19s-2w, more than a mile southwest of the Lagree 1. Presence of oil in the Viola lime in this sector may lead to the drilling deeper of some of the smaller gas wells in the Decker field.

Harris and Haun's David Kaegi 2, NE NE SE Section 20-19s-1w, one-half mile west of the town of Canton, was completed with a flow of 37,600,000 cubic feet of gas at 1005 pounds rock pressure. Production is coming from the chat horizon at 2924 to 2971 feet. This is one of the largest volumes and highest rock pressures so far encountered in the area. The area west of Canton has not revealed the presence of oil in the chat since all of the tests have been located high on structure and have resulted in gas producers. It seems logical that as this part of the area is drilled farther out from the top of the dome, oil may be found in the chat horizon in quantities at least as large as those found in the Decker structure.

Only routine reports came from the interesting Ellsworth Arch area during the week. There is little doubt that the next drilling boom in the Mid-Continent area will be located in central western Kansas where the Ellsworth and Barton-Chatauqua Arches have yielded more than a dozen discovery wells in the past 18 months. None of the wells has secured an outlet and several have not been fully tested due to lack of storage facilities. Initial production is being estimated from 2500 to 5000 barrels on the larger wells in western Rice and Ellsworth Counties, and a 38,000,000-foot gasser has recently been completed in eastern Rusk County where oil is known to exist. Acreage is held in large blocks by the major companies and in widespread checker-board blocks by the larger independents. Several important lease transactions have been reported within the past few weeks.

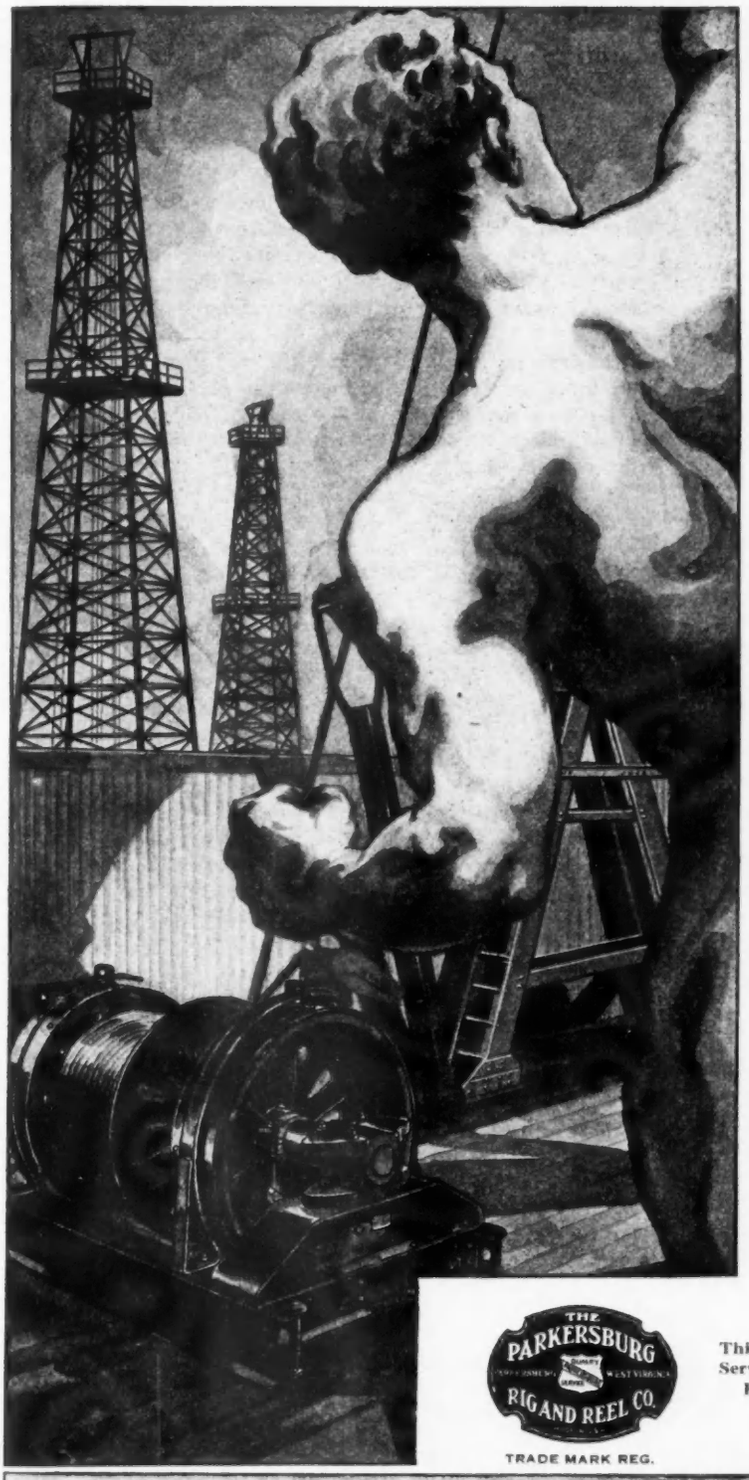
Oklahoma City Crude Sales Reduce Storage Considerably

Oklahoma City.—Two large sales of Oklahoma City crude reported Saturday, September 26, are due to reduce storage in that pool almost to tank bottoms before the end of the present week. Both are reported to have been consumated at the posted price, which if true may have an important bearing on the price situation. T. B. Slick interests, with a reported storage of 175,252 barrels on September 1, sold a total of 250,000 barrels, of which 215,000 barrels go to Stanolind Crude Oil Purchasing Company, 20,000 barrels to Tidal Oil Company, and 15,000 barrels to Continental Oil Company. This sale wipes out the last large amount of stored oil held by any Oklahoma City producer.

Slick Estate will empty storage and obtain the remainder of the contracted amount from new wells whose eight-hour potentials have not been completed. Wells from which production will be obtained are as follows: Classen-Edwards 5, 2½ hours remaining on the eight-hour potential; Classen-Edwards 6, five hours remaining; Central 2, five hours remaining; Central 1, 4¾ hours remaining, Burroughs 1, four hours remaining; and Terminal 2, seven hours remaining. All have served the 65-day shut-down required under proration regulations.

British-American Oil Company, with 30,628 barrels in storage on September 1, sold a total of 35,000 barrels, of which 15,000 barrels will go to Stanolind Crude Oil Purchasing Company, 10,000 barrels to Sinclair Oil & Gas Company, and 10,000 barrels to Oklahoma Pipe Line Company.

New work apparently will pick up within the next few weeks if the seven locations announced during the week are converted to the drilling report within a reasonable time. Four wells were added to the completion list during the past week bringing the total number of completions up to 837. S. M. Stauffer, Trustee, Jones 1, SW NW NW NW Section 2-11n-3w, produced 1974 barrels in 1½



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hours with gas at the rate of 45,000,000 cubic feet. Production is coming from 140 feet of Wilcox sand topped at 6240 feet. Sunbeam Drilling Company completed its Wheeler 1, NW SW NW SE Section 15-11n-3w, flowing 4638 barrels the first four hours. Gas gauged 27,000,000 cubic feet through a five-inch choke. Wilcox sand was topped at 6410 feet and drilled to a total depth of 6528 feet. Wilcox Oil & Gas Company and Marshall's Butcher 1, SW NW Section 3-11n-3w, encountered top of the Wilcox sand at 6371 feet and drilled to 6515 feet. Production for the first three hours was 4828 barrels with gas estimated at 20,000,000 cubic feet. Wilcox Oil & Gas Company et al's Dambold 1, SE NE SW Section 15-11n-3w, flowed 3927 barrels in two hours and 18 minutes, bringing its total production to 6067 barrels in four hours and 18 minutes.

Caddo County Test is Now Oklahoma's Deepest Well

Ardmore, Okla.—Mid-Kansas Oil and Gas Company and Ramsey Petroleum Corporation's Preston-Culp 6, NW NW NE Section 6-5n-9w, in the western portion of the old Cement pool, in Caddo County, is now Oklahoma's deepest drilling well, and without mishap will have established a depth record for the United States before the end of this week. On the report of Sunday morning, September 27, it was drilling at 9925 feet in sandy shale formation, still in lower Pennsylvanian rocks.

Chanslor-Canfield Midway Oil Company's Hobson A-2, Rincon field, California, now holds the domestic record with a depth of 10,030 feet in a 4¾-inch hole. It has since been plugged back to 7825 feet, where it apparently will make a small well.

The Preston-Culp 6 is still an eight-inch hole open from 5313 feet, where the nine-inch casing was cemented. This will permit the use of two additional casing strings and should enable operators to attain a depth in excess of 11,000 feet. Thickness of the lower Pennsylvanian series continues to surprise those who have studied geology of the area, although knowledge has been restricted entirely to a study of typical Southern Oklahoma section at the outcrop.

Some difference of opinion exists regarding the exact position within this series. Some geologists are correlating the sandy shales now being drilled within the lower portion of the Deese member while others think they may be in the middle or upper Deese. Although the owners have not indicated how deeply they intend carrying the test it is not believed that they will discontinue drilling before the bit goes out of the Deese member, which depth is more than likely to establish a new world record.

Mid-Continent A. I. M. E. Meet Gets Resignation of Secretary

Tulsa.—The Mid-Continent section of the American Institute of Mining and Metallurgical Engineers, held a special meeting in Tulsa on Saturday evening, September 26. Robert E. Talley, president of the Institute, spoke of the inside workings of the organization and discussed the economic position of the engineer in the oil industry.

Mr. Talley announced the resignation of Dr. H. Foster Bain, secretary, who leaves the Institute on October 1 to become associated in an investigation of new alloys and uses for copper.

Dr. Bain gave an interesting talk regarding his experience abroad during which he conducted a study in copper mining and methods principally in Germany and England.

A. B. Parsons, assistant secretary who is to succeed Dr. Bain as secretary, discussed organization and gave an outline of his plans for the coming year.

For First Time in 15 Years, Carter County Without Test

Ardmore, Oklahoma.—Carter County, for the first time in more than 16 years, is without an active drilling well. First production in the county was obtained in May, 1904, when Santa Fe Railway Company completed its discovery well in the Wheeler pool in Section 21-3s-2w. However the area did not bloom into a southern Oklahoma leader until 1913, when the Healdton pool was discovered. Since that time new pools have come in with surprising regularity and the county has not been without a number of important wildcat tests until recent months.

The last bid for interest came through development of an eastern extension to the Tatums pool in Sections 1s-2 and 3w, in the northwestern part of the county. This pool has been partly defined but will be the scene of further activity when conditions warrant.

Stephens County now leads southern Oklahoma activity with three drilling wells and one location rigged up waiting on completion of a water line. J. C. Chambers et al's Dare 1, SE NW SE Section 2-2s-8w, topped sand at 1360 feet and stopped drilling with a six-foot penetration. It is now shut down awaiting cement to set. George Pace et al's McMasters 10, SW NW NE Section 13-2s-8w, cemented casing at 1455 feet on top of an oil sand and will test within a few days; total depth is 1460 feet. H. J. Brown's Hightower 1, SW SE NE Section 15-3s-5w, is expected to make a small pumper from sand logged at 990 to 1003 feet. A liner was set in the sand and the hole filled 40 feet in three hours. Murray Petroleum Company is rigged up and waiting on water at its Wilkerson 1, SE NE SE Section 8-1s-5w. The two former tests are located in the northwestern portion of the Comanche pool and the latter are in the Velma district.

Gilbreath et al are shut down at contract depth of 800 feet in their Reardon 1, NW NE NE 17-4s-5e, wildcat test about 2½ miles southwest of the town of Ravia. This test is located less than four miles southwest of the outcropping Tishoming granite but in a faulted area which cannot be dependably interpreted because of alluvial deposits in the Washita River valley. From the apparent southwestern dipping of the granite surface as interpreted at the outcrop, it would not be possible to drill any great depth without striking granite.

Court Decision Rendered in Favor of Osage Indian Tribe

Tulsa.—A United States District Court decision in favor of members of the Osage Indian tribe was given by Judge Franklin E. Kennemar in Tulsa September 18, when he upheld motions presented by John M. Goldsberry, United States district attorney. His motions were filed at the request of the Secretary of the Interior.

Suits in behalf of present surface land holders in Osage County were filed last spring when the statute by which Osage mineral rights were given to the tribe as a whole, expired. Previously a statute had been passed by congress extending the period of tribal ownership. It was the contention of holders of surface rights that the later statute was not legal.

The United States district attorney entered motions to have answers and cross petitions stricken and to take default judgment against those who failed to answer. The action was a counter suit against the moves taken earlier in the year.

F. E. Riddle, attorney who represented many of the defendants, gave notice of appeal to the United States circuit court at St. Louis.

New Mexico and Rocky Mountain Area

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Greasewood Dome Promises Important Oil Area But No Over-Production Threat

ANOTHER vast territory with petroleum potentialities looms on the oil horizon. It is approximately 100 miles square and embraces all of northeastern Colorado and may take in parts of southeastern Wyoming and southwestern Nebraska. With such a vast potential oil area, the question naturally arises, will the new territory add further to the present over-production troubles of the oil industry?

So far only two wells have been completed. They are on Greasewood dome which lies partly in Weld and partly in Morgan Counties, Colorado. While these are good wells as oil wells go, they are not large enough to constitute a threat of over-production. The fact that the new district lies in the Rocky Mountain region, which has never had an uncontrolled over-production of light oil, practically removes any danger that otherwise might be from the development of another major light oil field. The further fact that most of the acreage is owned by major companies in large tracts and that most of the drilling will be at depths below 5000 feet precludes disorderly development.

The size of the two wells already completed on Greasewood structure, one with an initial production of 590 barrels and the other with 1428 barrels, is not so important as the discovery that oil has been proved to exist in a region heretofore not looked upon favorably because of its difficult geology and the great depths at which the oil was believed to have been trapped. The structures are different from most sections in the Rocky Mountain region in that they are low and flat with no sharp dips, and in a number of respects they greatly resemble many of the more important oil fields of the Mid-Continent.

Shortly after the discovery of oil and gas near Fort Collins, Colorado, about 10 years ago, the United States Geological survey undertook a general recognizance of northeastern Colorado. This work was in charge of K. F. Mather, James Gilluly and R. G. Lusk. A press notice on the region was released October 21, 1924. This was followed by the publication of Bulletin No. 796 about two years later by the Survey. Both publications contained maps of the region. Later geological investigations have proved these maps to be fairly accurate as to the general territory but inaccurate in many details. It was on the strength of the reports by the United States Geological Survey that the development work was undertaken on the Greasewood structure in 1926. Both Survey publications are now out of print.

While apparently there is not much surface geology from which to work out structures, there are a number of places where the Pierre shale and the basal Fox Hills are exposed. Aerial geology is said to bring out the structures and their escarpments more prominently. Since the discovery of oil at Greasewood, all of northeastern Colorado has been "fine-tooth-combed" geologically. Not only have the usual geological instruments been brought into use but all of the known geophysical instruments have been enlisted which in turn have been checked by core drilling. Continental Oil Company has led in the use of geophysical instruments. It has made use of the magnetometer, seismograph and the Torsion balance.

In a general way, geologists have worked out three anticlines in northeastern Colorado. They are the Pawnee anticline, the Greasewood anticline and the Fort Morgan anticline. The axis of the first is almost due north and south, the second slightly southeast and northwest and the third inclines slightly to the southeast and northwest from almost east and west. There are a number of "highs" on each of these anticlines and they are also flanked on on either side by separate structures. A number of these structures have not yet been named.

Because of so many structures, it is not unreasonable to suppose that other structures may be found with more important production than on the discovery structure. It is also reasonable to suppose that some of these structures may not require such deep drilling. However, the drilling is good. It is essentially a rotary country. One contractor made an average of 110 feet for 10 hours and drilled a total depth of 2300 feet in 24 hours. It is understood that the price for drilling ranges all the way from $6 to $10 a foot.

Platte Valley Petroleum Company's discovery well on Greasewood Dome was started May 6, 1926, and was completed October 10, 1930, at 6660 feet with an initial production of 590 barrels. At various times, the well has been drilled a few feet deeper until it is now 6691 feet deep, 31 feet in the sand; and it is flowing 200 barrels daily. This test had gas in a stray sand at 1600 feet again at 2185 feet and again at 2870 feet. The Hygiene was topped at 3200 feet and drilled through at 3285 feet. There was a good showing of oil in the Benton at 3700 feet.

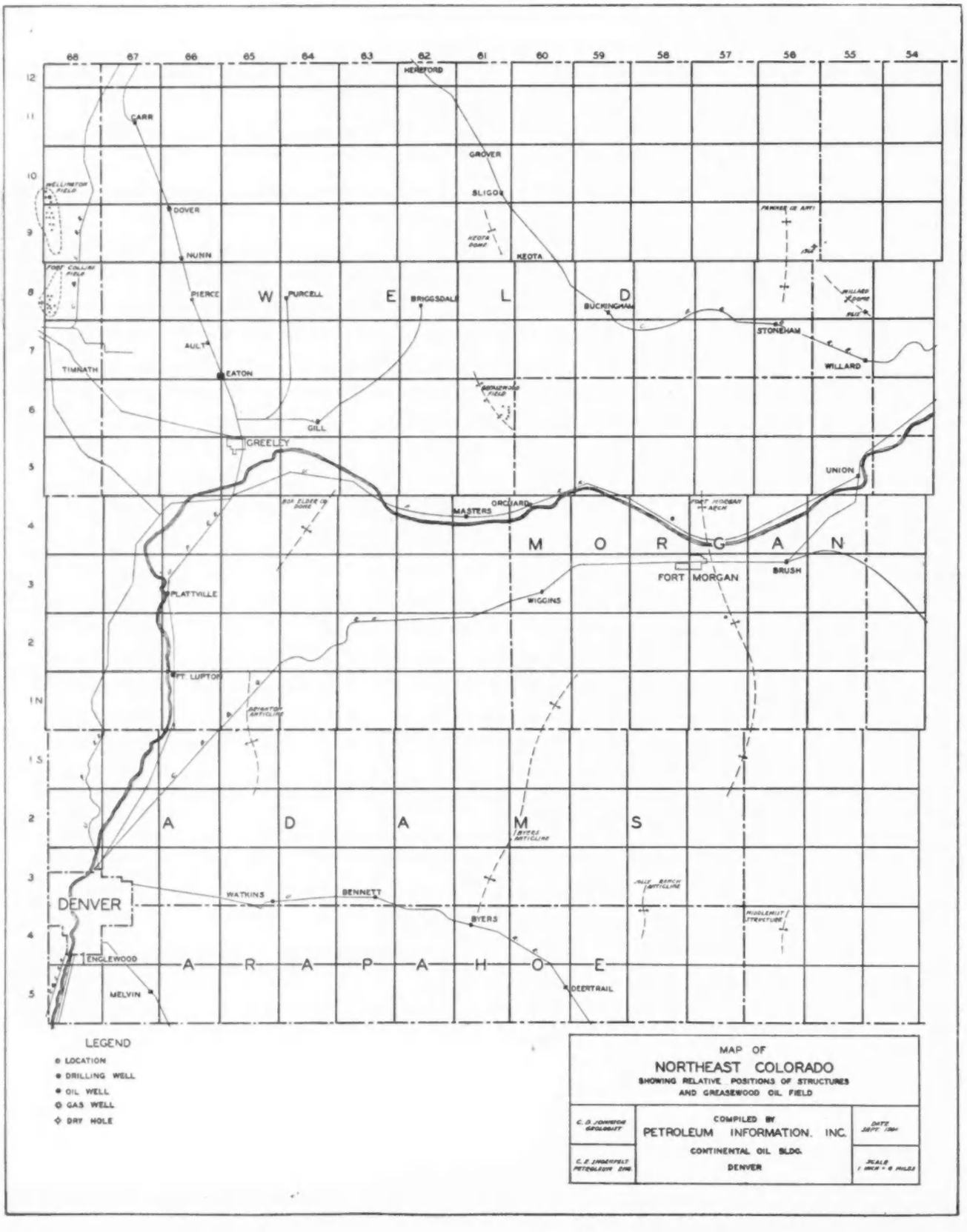
The second well was drilled by Reiter-Foster Oil Corporation on land leased from Platte Valley Petroleum Company. It is the Ida Johnson 1. The sand in this well, the Muddy, was topped at 6644 feet and when three feet in, it produced 1428 barrels the first 24 hours. It has since dropped down to a little less than 400 barrels daily. This well was spudded May 8, and completed August 25, 1931. It has been drilled 10 feet in the sand and may be drilled deeper.

No company has drilled through the Muddy sand which should be anywhere from 35 to 80 feet thick. It was from 35 to 40 feet thick at Fort Collins and is said to be 80 feet thick where it outcrops near Greasewood. Continental Oil Company has two tests near completion on Greasewood and it is believed that it will drill one of them to the

Dakota and Lakota sands so as to know what is in the lower members of the Dakota series.

The average elevation of most of the structures is from 4500 to 4700 feet. The elevation is higher toward the north. The closures of most of the structures are from 100 to 200 feet. The dips are usually less than one degree and rarely more than two degrees. There is a large gathering area with gentle folding and not very prominent faults or at least they do not show plainly on the surface.

The oil is of a very good grade for refining purposes and will average around 42 gravity. It is light green in color with a paraffin base and only a trace of sulphur. It



has a content of 31 per cent gasoline, 13 per cent kerosene, 12 per cent gas oil, 27 per cent distillate, 16 per cent steam refined stock, and one per cent loss. The natural gas shows a gasoline content of two gallons per 1000 cubic feet. The rock pressure gauges approximately 1400 pounds.

Some of the most interesting tests are the Aztec, 2½ miles northwest of the discovery well; Prairie Oil & Gas Company's, four miles southeast of the discovery; Colorado Associated Oil Company's 3½ miles northwest of Fort Morgan; and Indian Territory Illuminating Company's, five miles south of Fort Morgan. The last two named should be completions within the next 30 days.

Ever since the completion of the discovery well on Greasewood, there has been an active leasing campaign in northeastern Colorado. It is estimated that fully 3,000,000 acres are under leases in Weld, Morgan, Logan, Washington, Adams, Arapaho, Lincoln, Kit Carson, Cheyenne, Kiowa, Fremont and Las Animas Counties. The most active counties are the first five named.

The pioneer major companies to enter the territory were Reiter-Foster Oil Company, Indian Territory Illuminating Oil Company (Cities Service), Ohio Oil Company, The Texas Company, Midwest Refining Company and Continental Oil Company. Continental Oil Company and Ohio Oil Company are very strongly fortified. So is Reiter-Foster Oil Company. Other major companies that have acquired considerable acreage recently are Magnolia Petroleum Company, Gypsy Oil Company, The California Company, Phillips Petroleum Company, Ramsey Petroleum Company and Prairie Oil & Gas Company.

There is no pipe line from the field to railhead. The oil is being handled from the field by Continental Oil Company in trucks to Orchard and then shipped to Denver for refining in its new refinery. This company has been granted a certificate of convenience and necessity by Colorado Public Utilities Commission to lay a pipe line from the field to its refinery at Denver. Independent Oil & Refining Company and Mountain States Refining Company have refinery sites at Orchard and have under consideration the laying of lines from the field to their refinery sites. The distance would be about 12 miles. A branch of the Union Pacific railroad runs through Orchard and also the south fork of the Platte river.

If future discoveries should result in an intensive drilling campaign, water for rotary rigs will be a serious problem. There has already been a shortage for drilling resulting in several shut-downs. There is some talk of drilling for water and also laying a water line from the Platte river. At present the water supply is obtained from Jackson Lake, a reservoir for irrigation purposes. The water is piped from the reservoir by Reiter-Foster Oil Company through a four-inch line about nine miles long. There is also a possibility of running a power line from Greeley which would go far to solve the water problem.

As yet there is no telephone in the field. Neither are there any oil well supply stores nearer than Denver, Greeley, Orchard and Fort Morgan are making a fight for the oil town of the field. Recently the town of Gearhart has sprung up in the field. It has a 28-room hotel and the proprietor has recently been appointed postmaster. There are lunch rooms, soft drink places, a service station, and a machine shop in the new town. There is also another machine shop near the producing wells.

Another good well on Greasewood will increase the interest on that particular structure and a discovery on any of half a dozen other structures in the general territory would cause an intensive drilling campaign. Whether a new oil empire is in the making in northeastern Colorado will soon be determined by the drill. At the present time, the territory is being closely watched by representatives of major companies operating in Oklahoma, Texas and the Rocky Mountain states.

Development on Greasewood Dome in Colorado

PRODUCING WELLS

Platte Valley Petroleum Company's Patterson 1, (discovery well) center se nw section 24-6n-61w, Greasewood structure, Weld County, 200 barrels daily along with 750,000 cubic feet of gas.

Reiter-Foster Oil Corporation and Platte Valley Petroleum Company's joint test, Ida Johnson 1, center nw nw section, 24-6n-61w, Greasewood structure, Weld County, 400 barrels daily along with 1,500,000 cubic feet of gas.

DRILLING WELLS

Continental Oil Company's Briggs 1, C SE SW Section 13-6n-61w, Greasewood structure, Weld County, standing with seven-inch casing cemented at 6585 feet, and hole bottomed at 6633 feet.

Continental Oil Company's Gadbois 1, C SE SW, Section 24-6n-61w, standing with 9⅝-inch casing set and cemented at 5493 feet, Greasewood structure, Weld County.

Reiter-Foster Oil Corporation, Johnson-Juhl 1, C SE SE, Section 14-6n-61w, Greasewood structure, Weld County, standing with 9⅝-inch casing set at 5547 feet.

Indian Territory Illuminating Oil Company and Reiter-Foster Oil Corporation, C NE NE, Section 16-1n-57w, south of Fort Morgan in Morgan County, drilling below 5600 feet with 300 feet to go to objective.

Greeley Oil Company's Gadbois 1, NW NW, Section 25-6n-61w, Greasewood structure, Weld County, standing with 15⅓ inch conductor cemented at 214 feet.

Aztec Corporation's State 1, NE NE, Section 16-6n-61w, Greasewood structure, Weld County, spudded.

Badger Creek Oil & Gas Company's Juhan-Kent 1, SW SW, Section 5-2n-57w, Morgan County, standing at 1200 feet.

Colorado Associated Oil Corporation's Pumphrey 1, SE SE, Section 14-4n-58w, Country Club structure, Morgan County, drilling at 3800 feet.

Eastern Colorado Oil Corporation's State 1, SE SW, Section 36-14s-57w, Kelly Dome, Lincoln County, fishing tools at 3449 feet with showing of gas at 3425 feet.

LOCATIONS

Ohio Oil Company's Gadbois 1, SW SE, Section 24-6n-61w, Greasewood structure, Weld County.

Ohio Oil Company's Gadbois 2, NE NW, Section 25-6n-61w, Greasewood structure, Weld County.

Prairie Oil & Gas Company's No. 1, NW NW, Section 2-5n-60w, Jackson Lake structure, Morgan County.

Independent Oil & Refining Company's Schmidt 1, NE NW, Section 19-6n-60w, Greasewood structure, Morgan County.

Reiter-Foster Oil Corporation's Wilson 1, NE SE, Section 24-6n-61w, Greasewood structure, Weld County.

Tulsa-Fort Morgan Oil Company's No. 1, SE SW, Section 18-6n-60w, Greasewood structure, Morgan County.

Gulf States Oil Corporation's No. 1, Section 6-4n-63w, Box Elder structure, Weld County.

Deep Testing of St. George District, Utah, Is Planned

Los Angeles.—Deep testing of the St. George district in Washington County, Utah, is provided in a contract between Empire Lease and Royalty Company of Los Angeles and Escalante Explorations, Inc., a Canadian company. Several tests were made in that area several years ago in which some commercial production was found, but none was drilled deeper than 750 feet. The new tests will go at least 2500 feet.

Escalante Explorations has subleased approximately 1500 acres held by Empire Lease and Royalty Company in Washington County, and together with a few minor tracts has made up a community block for development. The contract calls for one well for every 20 acres if commercial production is found.

Empire Lease and Royalty Company controls about 2000 acres of leases and an equal amount of overriding royalty acreage in Washington County, all of which is in the St. George district. The land involved in the Escalante deal offers structural encouragement and was thoroughly geologized by the company before the contract was closed. Drilling in the first test is to start within 90 days.

News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

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New Deep Zone in Potrero Townlot Sector, Promising

Los Angeles.—The new deep zone opened up in the townlot sector of the Potrero field is holding up better than most of the shallower sands found at various levels between 4000 feet and 6000 feet; and several operators are attempting to deepen their wells to this formation.

Beloil Corporation's Coffin 1, completed 10 days ago at 6508 feet, is still flowing clean oil and more gas than ordinarily expected from such a producer. The casing pressure has been high, and with only 100 feet of fine gray sand open, the well is flowing from an entirely new zone. Several wells which have been idle for several months are being rigged to deepen.

Wilshire Annex Oil Company will start a second well on the Potrero Country Club lease, a good distance from the townlot activity. The first well is still flowing 500 barrels of oil. The townlot activity flares up periodically and dies down when the best producers increase their flow of water, or when a series of tests prove disappointing. The zones have been thin and irregular, often standing almost on end and showing a broken condition.

Interest at Kettleman Hills Centers on Middle Dome Test

Coalinga, Calif.—Interest in the Kettleman Hills field is centering around Petroleum Securities Company's Burbank 1, deepest test on the Middle Dome, and North American Oil Consolidated's Blauvelt 1, an edge test on the North Dome which promises to extend the field by more than a half-mile. Although widely separated tests and started to prove entirely different areas, these two wells will go a long way toward determining the amount of drilling to be done on the edge of the North Dome and the entire Middle Dome.

Failure of Petroleum Securities Company's Burbank 1 to cut a consistent oil sand below the 8⅝-inch shutoff at 7326 feet has been a disappointment and certainly makes the ultimate outlook appear rather doubtful. Streaks of oil sand have been cored, but the well does not act like those on the North Dome.

Standard Oil Company is drilling at about 5800 feet in No. 6-29V, an offset on the Middle Dome to Petroleum Securities Company's Burbank 1. This well is located near the top of the structure but should not regularly make a good producer unless Burbank 1 also proves a success.

Number 6-29V is being drilled under pressure and represents an interesting experiment. A pressure of more than 1500 pounds is being carried on the pumps, while the discharge mud pressure is almost 1300 pounds. Formation water is being held back while additional hole is made. Two draw works were installed, one being used for drilling and another for snubbing in and out while running and pulling the drill pipe. Two installations are not absolutely necessary, but as the pressure arrangement necessitated a heavier draw works, both are being utilized. The formation stands up well and the pressure is used only to hold back the salt water which would normally enter the hole.

The rotary mud was rapidly contaminated in one well drilled below 5000 feet, and the pressure installation was found less expensive than lighter equipment and a constant change of rotary mud.

North American Oil Consolidated's Blauvelt 1 topped the Temblor formation at 8505 feet and is now drilling below 8600 feet. This outpost test found the top of the oil sand more than 1000 feet below the depth at which it was topped in Shell Oil Company's Dixon 1, nearest producer. Oil showings were not found in Dixon 1 until nearly 500 feet of Temblor had been cored. Such a development in the Blauvelt test would throw the first definite cuts at about 9000 feet. Completion of this well will not be attempted above any depth which will establish a new record, if the production test is successful. The structure plunges rapidly at this point, but this was expected. Surface indications alone were enough to indicate such a development. The northeast slope looks more promising than the southwest flank.

Standard Oil Company has made location for an extension test on the North Dome, Section 23-22-18, on the southeast flank of the structure. General Petroleum Corporation obtained production on the southeast slope and proved that the North Dome will extend far down the flank from the discovery well.

Kettleman North Dome Association will also drill two wells to determine the trend of production. This activity will not lead to extensive offsetting, but should be of value in arriving at the probable maximum producing acreage on the North Dome.

Test of New "57" Zone Is Planned at Ventura Avenue

Ventura, Calif.—Bolsa Chica Oil Corporation, through Superior Oil Company, is ready to spud in Hartman 6, and will test the new "57" zone which was recently opened up by Associated Oil Company. A 178-foot derrick, one of the tallest ever built, is being used and it may be necessary to drill the well to 9300 feet for completion. Associated Oil Company completed its Lloyd 57 at 8823 feet and obtained a production of 5000 barrels.

Pacific Western Oil Company tested Orton 7 at 7175 feet, but with an initial production of only 100 barrels, the outlook is not especially promising. The gas production was extremely low, but the water which accompanied the oil showed little salt and the well may increase its flow. Several adjustments were made before and during the test, and it may be necessary to make more hole to increase production.

Associated Oil Company's Lloyd 57, discovery well in the "57" zone, is still flowing more than 2000 barrels of clean oil from 8823 feet. This is one of the deepest commercial producers in the world and would ordinarily have started an extensive drilling campaign in the average field. The field is principally controlled by two companies, and this, coupled with the fact that the depth is excessive, has checked field operations.

Lost Hills Field's Deep Zone Possibilities Soar

Bakersfield, Calif.—Deep zone possibilities in the Lost Hills field took a decided upward turn during the week, with the discovery of more than 50 feet of oil sand below 5225 feet in Lincoln Petroleum Company's Theta 1A, Section 12-26-20. A good gas pressure developed and a string of 4¾-inch casing will be cemented at 5224 feet for a production test.

The last cores showed a fine-grained oil sand which was mixed with a lighter shale and sand. Rapid examination of the cores showed a cut of light oil. The showings were the best yet encountered in the well. This well has been tested at various levels, but has never produced more than a small amount of oil and gas. The shale body found above the oil sand will be ideal for cementing the small string of casing.

The Lost Hills field was regarded as a favorite for production in the Temblor formation, which is the principal producer at Kettleman Hills and North Belridge. Since the field lies farther out in the valley than either of the fields now productive, it has been assumed that the Temblor will be found even deeper than 6000 feet. This may not be true, however, since a shale body found at Kettleman Hills is cut much higher at Lost Hills. There is a possibility that this shale body may thicken toward the south, and in that event the Temblor may be found as deep as expected by some geologists. The original formations along the bed of the valley may also rise and fall, in which event Lost Hills might be deposited on an irregular bed which was once higher than Kettleman Hills.

Santa Barbara County's Active Wildcat Tests Little Changed

Santa Barbara, Calif.—Little change was noted during the week in the status of active Santa Barbara County wildcats.

O. C. Field Gasoline Corporation's Norswing 1, a test near Santa Maria which has been idle for a year, has been abandoned at 5568 feet. Several streaks of oil sand were cored, but nothing of importance was cut. The shale and thin streaks of oil sand found near the bottom of the hole were not tested.

Western Gulf Oil Company is drilling at 7500 feet in Bradley 1, an indirect offset to Norswing 1. Streaks of oil sand have been cored in this well, but nothing which would have yielded oil in commercial quantities has been found.

General Petroleum Corporation has drilled to 6912 feet in More 3, a deep test in the Goleta district, and will plug and test showings found below 6000 feet. This well produced gas above 5000 feet.

Playa del Rey Deep Test Considered Disappointing

Los Angeles.—Herndon Oil Company is attempting to place No. 3, a deep test in the Playa del Rey field, on production at 6335 feet, but the well shows little indications of becoming such a producer as either Nos. 1 or 2. Swabbing has brought flowing by heads, but the showing is a disappointment. The first wells were good producers in the deep zone and the third test falls far below the standard of earlier completions. A string of 6⅝-inch casing was cemented at 6020 feet and all of the bottom of the deep zone was included below the shut-off.

Activity has declined until only four drilling wells are making hole. No attempt is being made to develop the shallower zone further. Much of the townlot activity centered around the shallow zone. Ohio Oil Company is testing the water shut-off of the 8⅝-inch casing at 5410 feet in No. 11 and will complete the well in the deep zone. This company leads in the number of producing wells, but is not anxious to develop its holdings further at this time.

No enthusiasm is apparent among the townlot operators, most of whom are content to hold what they have. The number of receiverships has been large, and recently an effort was made to form a blanket receivership for a group of operators. This was not accomplished, and it has been rumored that individual receivers were at least partially responsible for the failure.

Huntington Beach's Future As Deep Producer, Doubtful

Huntington Beach, Calif.—Huntington Beach will soon pass out of the picture as a potential deep producer, unless something of a more spectacular nature develops within the next few weeks. Failure to obtain commercial production in the few deep wells drilled to points below 7000 feet does not necessarily condemn the field as a deep producer, but it certainly is leading toward another period of inactivity. The most recent tests were no more convincing than earlier tests, unless it is assumed that they indicate a definitely doubtful outlook.

Huntington Beach has never held the favor which Long Beach held, as far as the deeper zones were concerned, many geologists claiming that its location is slightly out of line with folding which should have trapped oil around 8000 feet. Others think that the Miocene will not be reached much short of 9000 feet, and that the present tests are in the bottom of the Pliocene. Such arguments are not as important as actual tests of the deeper sands.

Superior Oil Company's most recent test in Eberle 1 at 7457 feet showed little more promise than previous efforts at higher levels. A string of tubing was run and the hole swabbed without a liner, but the well responded with a small flow of water. Absence of gas and oil was a distinct disappointment. The formation was a hard gray shale and sand. This company has made a series of tests in this and other wells in the field, but has not developed more than a trace of oil. A good gas pressure was developed below 7000 feet in the first deep test, however.

W. E. McCaslin is still worrying with Transport 17, which was drilled to 8365 feet, and has again installed a rotary to drill out the bridge at 8000 feet. Cable tools were used for a time, but proved unsatisfactory.

Number of Ventura Wildcats Is Smallest Recorded in Two Years

Ventura, Calif.—Many of the more remote wildcats in Ventura are idle, with the total number of active tests standing at the smallest figure recorded for several years.

Chanslor-Canfield Midway Oil Company is still trying to complete Hobson A2, which was drilled to 10,030 feet and plugged back to test the upper showings above 7825 feet. This wildcat in the Rincon hills probably will not make a large well, but it may be possible to obtain commercial production above the plug. A flow of 250 barrels was recorded at 7479 feet, prior to deepening to a new record, but the company has not been able to do as well by including the portion of the zone originally tested and a few hundred feet more for good measure. The compressor is being used on the present test at 7825 feet, as was also done at 7479 feet.

East Central Texas Field Notes

H. H. KING, ***Staff Representative, Fort Worth, Texas***

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Drilling Activity Abatement In East Texas Field Pending

Longview, Texas.—More rotary rigs are operating in the East Texas field than at any time since its discovery one year ago this week, but there are definite signs of an abatement of this intensive drilling within the next few weeks. A survey of field reports made late last week reveals a total of 739 operations listed in the four counties now sharing in the production from the huge producing area, and this number includes 381 tests that have progressed beyond the spudding stage. Derricks and rigs accounted for a total of 272, while locations reached an aggregate of 86 in the four counties. This record breaking volume of field activity is quite certain to boost the total number of producing wells to more than 2400 before the close of October, and should the field continue to be allowed to produce 185 barrels daily per well it would be yielding about 444,000 barrels daily.

Anticipation of an early reduction in the daily allowance per well on the part of some of the most active operators in order to restrict the output of the field to a maximum of 400,000 barrels daily is being followed by orders to taper off on new drilling. Threat of reduced well allowance is also accompanied by a feeling of uncertainty as to the present posted price of 68 cents per barrel remaining in effect with the winter months approaching. Recent efforts of some of the heretofore active crude buyers in the field to discard a portion of their outside connections with an explanation that their lines were loaded beyond requirements has created the impression in some circles that such purchasers are endeavoring to get the jump on the other buyers in curbing runs.

Humble Oil & Refining Company continues to lead all operators in the field in development work, and has carried approximately 100 operations on its current program for many weeks. This company was credited with 106 operations towards the close of last week, including 31 drilling tests; 64 derricks and rigs; and 11 locations. Announcement made last week by an official of the company that activity would be restricted in the future was partially fulfilled in that only 16 new locations were authorized by the company during the week. Gulf Production Company and associates maintain second place in volume of field work, with a total of 39 operations, including 24 active tests; 12 derricks and rigs and three locations. It is very probable that this company will begin restricting its drilling program also.

Magnolia Petroleum Company and Sun Oil Company are tied for third place position with a total of 29 operations each. Both are trying to confine their activity to taking care of direct offsets. Tidal Oil Company now ranks among the leaders in activity with a total of 21 operations, including 14 locations that were recently staked to take care of a portion of the direct offsets that have been forced by adjoining lease owners. The latter has 65 completed oil wells. Sun Oil Company has placed 54 wells on production, and Magnolia Petroleum Company had 125 completed wells, including two pumpers at the close of last week.

Arkansas Fuel Oil Company is getting underway on its recently contracted 100-well drilling program with Consolidated Drilling Company, which was formed by S. D. Hunter, Ray Drilling Company, Sultana Drilling Company and others to carry out this contract. According to the terms of the contract, the above drilling firm will drill 10 wells per month for $25,000 each completed for flowing through Christmas tree, and receive pay from oil run assignments from such well completed under the terms of the contract. A major supply firm has underwritten the contract in order to supply all equipment for such wells. Arkansas Fuel Oil Company was credited with eight drilling tests and six derricks and rigs underway late last week.

Having completed 72 producing wells without a failure or pumper, Shell Petroleum Corporation has 10 active tests in the field, and is starting up on four more. Sinclair Oil & Gas Company has apparently taken the lead on curbing new field work, as the company had 10 drilling tests late last week, and only one location announced as a follow-up. This company has approximately 80 completions scattered through various sections of the field.

The 24 companies listed on the accompanying table account for approximately 56 per cent of the total operations now credited to the East Texas field. This same group owns a much greater percentage of the locations, derricks and rigs. The miscellaneous group has a greater number of operations falling under the classification of active tests because a large number have suffered financial reverses after getting started, and in some instances will never reach the producing horizon with outside aid. The Joiner area has a high percentage of the tests that are just marking time.

That portion of the East Texas field lying north of the Sabine River and covering parts of Gregg and Upshur Counties is by far the most active spot on field work. It is known as the Longview area, and was credited with 304 operations, including 144 active tests and 130 derricks and rigs. The Kilgore area, covering the south portion of Gregg County and northern Rusk County, has definitely passed its peak level on development work, and also has scored the most completions as well as the greatest oil recovery to date.

East Texas' Daily Crude Yield Was 429,265 Barrels

Longview, Texas.—An average crude yield of 429,265 barrels daily was maintained by the East Texas field during the week ending 7 a.m. September 23 from 2053 completed wells, or approximately 10,000 barrels greater than the average maintained daily the previous week. Reduction of production allowance per well from 225 to 185 barrels daily went into effect 7 a.m. September 21, or a much greater daily output would have been registered for the past week. During the past week the field averaged 209 barrels daily per well, but completions were numerous toward the close of the seven-day period, while a number of old completions in the Joiner section are unable to produce their daily quota.

East Texas Field Operations

Most active companies operating in Gregg, Upshur, Rusk and Smith Counties, comprising the East Texas field, are listed below, with total operations held by each as of September 25, 1931:

Company—	Locations	Derricks & Rigs	Actual Tests	Total Underway
Humble Oil & Refining Company	11	64	31	106
Gulf Production Company, et al	3	12	24	39
Magnolia Petroleum Company	8	7	14	29
Sun Oil Company	7	10	12	29
Tidal Oil Company	14	2	5	21
The Texas Company	7	7	6	20
Yount-Lee Oil Company	4	9	7	20
Arkansas Fuel Oil Company	.	6	8	14
Shell Petroleum Corporation	1	3	10	14
Empire Gas & Fuel Oil Company	4	5	4	13
Mid-Kansas Oil & Gas Company	1	7	4	12
H. L. Hunt, et al	2	2	7	11
Sinclair Oil & Gas Company	1	.	10	11
Stanolind Oil & Gas Company	2	6	3	11
Stanolind-Simms Oil Company	2	2	3	7
Barnsdall Oil Company, et al	1	4	4	9
Atlantic Oil Producing Company, et al	1	7	3	11
Atlantic-Byrd-Frost, Inc., et al	2	2	2	6
Golding-Murchison Oil Company	1	1	4	6
Roeser-Pendleton, Inc.	.	2	4	6
East Texas Refining Company	.	3	2	5
Vacuum Oil Company	2	1	2	5
Amerada Petroleum Corporation	1	2	1	4
Falson Company	2	.	2	4
Total 24 companies	77	164	172	413
Miscellaneous companies	9	108	209	326
Total	86	272	381	739
Operations by Areas				
Longview	30	130	144	304
Joiner	25	73	125	223
Kilgore	31	69	112	212
Total	86	272	381	739

Humble to Curtail Drilling Activity in East Texas Area

Houston.—Under the drilling program which it has scheduled recently, Humble Oil & Refining Company will reduce its number of drilling wells in the East Texas field below 30 within the next month, according to a statement given out early this week by W. S. Farish, president of the company. At that time, he said, the company had 48 wells drilling and 13 rigging up, or a total of 61 active operations; and the company had previously drilled one well to every 59½ acres that it owned in the field.

The statement was issued by Mr. Farish when asked about figures appearing in the daily press relative to his company's production and wells drilling in East Texas.

The statement contained the information that Humble Oil & Refining Company owned 15,886 proven acres in East Texas out of 113,988 acres, or 13.94 per cent; that as of September 23 the company had completed 267 wells out of 2053 for the field, or 13 per cent of the total; and that the company had produced at that time 6,560,238 barrels out of 68,287,208 barrels for the field, or 9.61 per cent.

Northwest Extension Effort At Longview Looks Doubtful

Longview, Texas.—Efforts of Daisy Oil & Gas Company for a mile northwest extension to the productive area of the Longview section of the East Texas field in Upshur County looked very doubtful last week when its B. F. Phillips 1 drilled to 3720 feet, or 3325 feet below sea level. This outpost test is located in the southeast corner of 64-acre tract, P. Whitestone Survey, and showed only a trace of oil when core was taken at 3716-20 feet.

Magnolia Petroleum Company's L. J. Everett 3, located on a 171.1-acre lease, L. J. Rigsby Survey, and a short distance northeast of Gladewater, furnished a surprise completion middle last week when the well flowed 200 barrels oil per hour through one-inch choke on tubing from broken pay at 3677-3682 feet. This well is credited with having only 14-inches of saturated oil sand and shale. It was carried 3291 feet below sea level.

In the Kilgore area, Tidal Oil Company scored two big producers on its J. S. King 80-acre lease, M. V. Winkle Survey, after having gained a light well on the previous attempt for production on this property. King 2 flowed at rate of 733 barrels per hour on open flow test from sand at 3553-85 feet, and King 3 gauged at rate of 720 barrels oil per hour open flow from sand at 3544-3591 feet, with shale at 3592 feet. Magnolia Petroleum Company's Dick Wells 5, located on the east edge of the Rusk County portion of the Kilgore area, is awaiting pumping equipment after having refused to flow from broken sand-lime and shale at 3674-3712 feet. Number 2 well on this lease was the first pumper in the Kilgore area.

Peyton Brothers-Joe Sanders et al are planning to drill a wildcat test about three miles due south of the nearest produc-

Great East Texas Field One Year Old October 3

Tyler, Texas.—The East Texas field will have rounded out its first year as a source of high gravity oil production in commercial quantities at 8 p. m., Saturday, October 3. On the above date and hour in 1930 C. M. (Dad) Joiner and aossciates' wildcat test on the Daisy Bradford farm, Rusk County, responded to 12 hours of swabbing from broken sand at 3536-3592 feet with a head of oil thrown over the crown block of the weather beaten wooden derrick. A second head of oil followed three hours later. When storage tanks became available the well earned an initial output of about 350 barrels of 38 gravity pipe line oil daily. A bid for an oil producer had been made by this wildcat test on the night of September 5 when a drill stem test revealed a light flow of oil and mud. The delay in making the completion was due to the sponsors of the test having virtually depleted their cash resources and drilled past the depth that their surface equipment could be efficiently operated.

During the 12 months that have elapsed since "Dad" Joiner successfully completed about three years of drilling efforts on the Bradford farm with a flowing well in a section of the state that was generally conceded to be barren of Woodbine sand in sufficient thickness to contain oil and gas in commercial quantities, the field has become an outstanding factor in oil circles. The field has been proven for approximately 100,000 acres, extending in a northeast and southwest direction without a break for a distance of about 35 miles, with a maximum width of about nine miles. There will be approximately 2200 completed oil wells when the field passes its first milestone, and it is not a remote possibility to forecast the eventual drilling of a duplicate number of wells during the life of the field.

tion in the Joiner area, having made location in the northwest corner of the W. B. Perry north 68 acres of the 136-acre tract, N. L. Sparks Survey. There are no dry holes to indicate that the field might not continue south to the above location. Pure Oil Company is one of the largest owners of leases between the above location and the field proper, and is reported to be negotiating for the disposal of a portion of the acreage to a major company in Dallas.

Only Three Companies Shipping East Texas Crude by Tank Cars

Longview, Texas.—Only three companies are shipping any appreciable quantity of East Texas crude from the field in tank cars, and total shipments for all companies during the week ending 7 a. m. September 23 averaged only 10,957 barrels daily. Crown Central Petroleum Corporation was the largest shipper during the past week, having averaged 4383 barrels daily to its refinery at Houston, while Houston Oil Company held second place with a daily average movement of 2153 barrels. Mid-Kansas Oil & Gas Company averaged 2060 barrels daily to the Fort Worth refinery of the Marathon Oil Company, an affiliated concern.

East Texas refineries are gradually working up to their former high rate of operation, and during the past week received a daily average of 33,047 barrels of crude, or a gain of 7483 barrels compared to the previous week. Some of these plants are receiving crude for refining on a profit sharing basis to be shared in by producers, and others are getting deliveries on old contracts, but the bulk of the oil now consumed is at the 68-cent price level. During the past week crude movement over trunk lines averaged 331,180 barrels daily, representing a gain of 36,913 barrels over the average for the previous week.

Joiner Lease Transfer Has 10-Well Drilling Obligation

Tyler, Texas.—A 10-well drilling obligation within 10 months is reported to have been assumed by the Golding-Murchison Oil Company, Dallas, along with a substantial cash and oil payment for one completed well and 338 acres of leases held by LaSalle & Davenport on the southeast edge of the Joiner section of the East Texas field.

The deal is credited with involving a cash payment of $62,500 upon approval of titles, and an additional sum of $537,500 payable out of nine-sixteenths of the first gross production. The completed well is located on the T. L. Kinney 94-acre lease, J. B. Cadena Survey, and its completion May 14, 1931, afforded a wide extension to the production area with an initial flow of 75 barrels per hour through three-quarter-inch choke on casing.

Phillips Petroleum Company has elected to farm out its H. L. Griffin 80-acre lease, located a short distance north of the above mentioned property, for a cash and oil consideration of $108,000 and a one-quarter over-riding royalty interest. J. P. Nash and R. F. (Bob) Windfohr, pioneer operators in the Graham-Olney section of the North Texas district, are reported to have made this acquisition.

Tyler, Texas.—A group of representatives of the gasoline department of Phillips Petroleum Company were in the East Texas field recently looking for prospective sites for gasoline plants. The company is reported making efforts to obtain enough casinghead contracts to warrant construction of three plants.

Van Field's Lower Horizons Are to be Explored Shortly

Tyler, Texas.—Exploration of the lower horizons in the Van field, Central East Texas, to try for oil and gas production in the Trinity sand series is expected to be launched shortly by Pure Oil Company and other members of the unit plan. The object of such a test would be to determine the deep pay possibilities of a number of non-producing leases that will expire in 1932. It is reported that the location for the deep test has tentatively been placed in the lower end of the Nacogdoches County School Lands Survey, and in the southwest portion of the area now producing from the Woodbine sand horizon at an average depth of 2900 feet.

The nearest approach to a deep test for the area was made last November when Pure Oil Company's A. G. Tunnell 1, located in northeast part of 50-acre lease, Mund Gross Survey, abstract 299, and on the north edge of the field, drilled to 3797 feet after missing the Woodbine production. Tunnell 1 was abandoned in hard black shale and white sandy lime formation. In view of the fact that Van unit members virtually control all nearby leases as well as the bulk of the field, no difficulty would be experienced in continuing to control the production in the event a successful completion should be made in the Trinity sand. Only one active rig is credited to the Van field at present, and it is located on Pure Oil Company's Mrs. W. A. York 4, an inside location.

Search for Deep Production Is Extended to Olney Area

Wichita Falls, Texas.—Search for deep lime production in the shallow oil pools of Archer County has been extended to the Olney area and a short distance south of the Archer-Young County line by W. H. Junker and associates' J. A. Winkler 1, which is drilling below 1300 feet. This test is scheduled to drill below the 2000-foot level, and will be the first so-called deep test in the area. It is located in the J. Poitevent Survey, abstract 226.

Drilling water shortage has hindered progress on a few of the deep tests in the Chalk Hill section of Archer County. Deep Oil Development Company's L. F. Wilson 1, lease 5-A, has been temporarily halted in Ellenberger lime at 5505 feet for water after having penetrated the hard lime for 65 feet with the last show of oil at 5177 feet. This test has fulfilled contracted depth, but plans are to try and drill below the 6500-foot level unless a heavy flow of sulphur water appears in the Ellenberger.

The eighth failure within a five mile radius of the two flowing wells in the 2200-foot lime horizon in the Chalk Hill pool was recorded last week when G. O. Trahan and Bob Cole's Coleman 1, located northeast of production, developed only a small show of oil after cementing 6⅝-inch pipe at 2189 feet. It was drilled to 2265 feet.

Big Spring, Texas.—Howard County Refining Company has been formed by local interests to take over and operate the 2500-barrel daily capacity skimming plant built near here in October, 1928, by Big Spring Refining Company. The plant has been idle for about three months. The new owners of the plant have incorporated with a capital stock of 25,000 shares of non-par value, and Robt. T. Piner, banker and trustee for the Roberts Estate, principal royalty owner in the Howard-Glasscock field, will head the new company.

Highlights of Presentation and Discussion of Papers at Lufkin Meeting of A. P. I.

(Continued from page 15)

2. "Welding Steel Oil Storage Tanks," prepared and read by Edward E. Dillman, Wyatt Metal & Boiler Works, Dallas, Texas. This paper gave details of construction by welding of large steel storage tanks of 50,000 barrels or larger capacity. It was emphasized by Mr. Dillman that the data in the paper applies only to welding of non-riveted storage tanks.

When the paper had been read and questions were in order, E. Stanley Durward of Shell Petroleum Corporation, asked for an estimate as to the salvage value of welded tanks cut down in West Texas and moved to East Texas. The speaker replied that some companies estimated it at 25 per cent but that 35 per cent might reasonably be expected.

W. C. Kinsolving of Sun Pipe Line Company brought up the question of whether or not shortages might arise in available experienced welders during times of aggressive tank building programs. The speaker replied that there are ample welded tank builders at present, and that although it is conceivable a shortage of welders might arise under normal or boom conditions, it is also quite likely that experienced tank welders will increase in numbers and be as readily available as experienced riveters. A. S. Feild of Vacuum Oil Company also entered into the discussion of this subject. It was pointed out in this discussion that the American Petroleum Institute has prepared separate manuals on cleaning storage tanks and on acetylene and electric welding.

The above two papers were both presented on Thursday morning with E. Stanley Durward acting as chairman. Both papers were illustrated with slides.

3. "Correct and Incorrect Drilling Practices in East Texas," prepared and read by C. W. Alcorn, Shell Petroleum Corporation, Dallas, Texas, was the first paper of the Thursday afternoon session, which was presided over by John A. Ritter of Sun Oil Company, Dallas, Texas. The paper described in detail some of the incorrect drilling practices that have been used in the East Texas field, and presented suggestions and recommendations on proper methods. Suggestions were offered as to selection and use of derricks, boilers and other equipment, and other major subjects which were treated, including drilling methods and practices in completing wells.

4. "Correct and Incorrect Producing Practices in East Texas," prepared and read by Blaine Johnston, vice president Simms Oil Company, Dallas, Texas. Mr. Johnston's paper may be described as resuming the discussion of East Texas field problems and practices at the point where that of Mr. Alcorn ended. In it Mr. Johnston described the correct and incorrect producing methods employed by the East Texas operators. Although pointing out that the large field has not yet reached the stage at which wells are commonly pumped, and stating that a great deal has not yet been learned as to the best ways for combating the impending paraffin troubles of the coming winter, he touched upon those subjects, and discussed bad and good practices as to Christmas tree hook-ups, pumping equipment, tank battery hook-ups, and other subjects falling under the head of producing methods and problems.

5. "Fire Prevention and Protection in East Texas," by M. L. Brown, chairman East Texas fire protection committee, and district superintendent for Sun Oil Company at Longview, Texas. Mr. Brown could not be present to read this paper, the first on the program for the Friday morning session, because of attending another meeting which had been scheduled for the same time, and it was read consequently by J. L. Manes, safety director, Sun Oil Company, Dallas, Texas. The paper outlined measures for preventing repetitions of the disastrous fires which have accompanied development of the East Texas field in the past, pointing out situations which may cause fires. The East Texas fire protection committee, a recently formed organization, was described, with information as to its objects and proposed methods of preventing and combating fires and progress which has been made with outlined plans. The Friday morning session was presided over by Blaine Johnston.

6. "Extinguishment of Bell and Graddy Fire in East Texas," prepared and read by E. Stanley Durward, Shell Petroleum Corporation, Dallas, Texas. This paper, the last on the program for the fall meeting, described in detail the equipment and procedure employed in bringing under control Bell & Graddy's Daniels 1, wild, burning well in the Kilgore field. The account of the digging of a tunnel through a hillside and of drilling into the casing from the subterranean position after tunneling to it, was an interesting story of a course of procedure carefully mapped out in every detail before being executed, with every likely possibility of accidents or emergencies safeguarded against in advance. The paper was elucidated by lantern slides and a short motion picture film of the flaming well.

7. Question Box Feature. This was the concluding feature of the business program of the meeting, and several interesting questions were brought up. One of them was: "What is the proper way to flow wells in East Texas under the conservation program which provides for allowable production of 185 barrels daily per well?" In connection with that question there was included a supplementary questioning as to the effect of different rates of flow upon paraffin trouble. It was conceded by those who took part in discussion of this subject that different wells will likely require widely varying handling methods. John R. Suman of Humble Oil & Refining Company, Houston, Texas, stated that extensive study and experimentation would be necessary in determining the best methods, but that it would likely be best as a rule to flow wells during the full 24-hour period in a day, under which conditions the well would not stand idle over long periods and paraffin would be less likely to accumulate. E. Stanley Durward pointed out the necessity for wide experimentation, however, in this connection, citing the instance of a well which demonstrated that it would produce its proration allowance in a more satisfactory manner if allowed to flow the full quota in two hours than if produced over a period of 10 hours, the conclusion being that while flowing over the short period at relatively high rate of production there was a tendency for accumulated paraffin to be expelled somewhat violently from the well, whereas under the smaller flow the well could not flow at sufficiently high rate to prevent or break up the accumulation of paraffin.

Blaine Johnston commented on the fact that East Texas wells would cause "sweating" of the lines leading from it flowing at the low rate of 10 barrels per hour, while they would not at 50 barrels per hour. This was attributed by E. Stanley Durward to the refrigerating or cooling effect of the oil and gas flow under the first condition. A. S. Feild of Vacuum Oil Company mentioned that there are differences in pour tests of oil from different wells in the East Texas field, and as an explanation of this condition the suggestion was offered that it might be due to differences in pressures in different parts of the field following varying withdrawals of crude from the separate areas.

South Texas Field Developments

EARL POST, ***Staff Representative, San Antonio, Texas***

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Camp Pool, Guadalupe County, Records Another Fair Producer

San Antonio, Texas.—One producer and two locations, both nearly one-half mile from production, featured the Camp pool's activity near Darst Creek, Guadalupe County. Humble Oil & Refining Company's Sue E. Denman 1-C, William Arrington Survey, due east offset to Camp's Denman producer, was flowing at the rate of 20 barrels an hour through a three-eighths-inch choke and was cleaning itself.

John F. Camp has located his Dan J. Denman et ux 1, 450 feet from the west line and 150 feet from the north line of a 50-acre tract in the William Arrington Survey, about 2500 feet south of the producers and near the Guadalupe River. The materials are being moved on and the well will be spudded about October 1. Humble Oil & Refining Company is reported to be making a location for a due north offset, which will be 1910 feet from the north line of the tract (highway) and 450 feet from the west line of the tract and between the Camp well and the two producers.

Humble Oil & Refining Company's new producer topped the Edwards lime at 2510 feet and was drilled to 2532 feet. The 6⅝-inch casing is set at 2472 feet in the Georgetown. The well was brought in September 27 through tubing on a three-eighths-inch choke without being swabbed. There was a heavy mud in the hole and it is likely that this has been holding back the flow. The well showed 90 pounds pressure on the tubing as compared with 220 pounds on the offset (discovery well). The well, however, caused the pressure on the Camp producer, which has been flowing for a month, to fluctuate only 10 pounds, further indicating that it is not draining the formation to capacity.

The Humble well went into the Edwards lime 15 feet deeper than the Camp well, but ran the formations regular. The original test faulted out everything between the base of the Taylor marl and the top of the Edwards, which was cored at 2495 feet.

These wells are of considerable interest inasmuch as they are one mile south and west of the Darst Creek production; and there has been considerable speculation as to whether or not they connect with the old field or have opened a new pool.

Still Having Trouble With Nueces County Wildcat Well

San Antonio, Texas.—Stanolind Oil and Gas Company is still having trouble with its Charles E. Stratton 1, in Section 12, Stratton subdivision of the P. Anchow Survey, six miles south of Agua Dulce, Nueces County. The well builds up an excellent pressure when closed in, but dies down as soon as it is allowed to flow.

The well is a wildcat and probably opens a new district in the southern part of the county, and was brought in at 4746-52 feet, showing 1400 pounds rock pressure and 1030 pounds working pressure on the tubing and 1150 pounds pressure on the casing through three-eighths-inch chokes. The pressure and volume dropped to practically nothing and the well was cored deeper to 4765 feet, where it was again completed. At this depth, the well originally showed 1200 pounds pressure on the tubing and 1300 pounds on the casing, but dropped to 675 pounds when it was closed in to change fittings. It built up a pressure then amounting to 1800 pounds, but soon dropped to 300 pounds on a one-half inch choke. Efforts are still being made to build up the pressure through the changing of chokes.

In the Saxet field, also in Nueces County, the only happening of the week was the starting of a new well by L. L. Smith, Inc., the Alexander 1, which at last reports had set 447 feet of surface casing and was waiting on cement.

The drilling report on the remainder of the field follows: Gulf Coast Oil Company's Sagarin 1, drilling 3020 feet; Elder 1, drilling in salt water sand at 4300 feet. Neal-Milton & Kepley Production Company's Roark 1, drilling 4495 feet. Saxet Gas Company's McCampbell 1, drilling 2445 feet in sand.

Develops Shallow Lube Oil Pool in Medina County Area

San Antonio, Texas.—Medina Oil and Refining Company is preparing to develop a shallow lubricating oil pool in Medina County, which will include the drilling of about six wells. The company has one well, R. J. Taylor 1, which has been producing for years, and a second completed last week for five barrels from total depth of 351 feet. They are located on Section 135, Bruchet Survey.

The interesting part of this development is that the oil is of 16 gravity and does not need refining. It does not contain gasoline or similar content.

Schoolfield and O'Byrne Pool Has Two Wells Near Completion

San Antonio, Texas.—The southwest extension of the Schoolfield and O'Byrne pool of Duval County continues active with two wells in process of completion and several more due to get the pay at any time.

Thomas and Tarver's Bishop Land Company 3, Section 135, was last reported drilling in after setting casing at 2285 feet. The top of the sand was logged at 2292 feet and total depth 2294 feet. In the same section, Duval Oil Company's Bishop Land Company 5 was drilling below 2200 feet and would be coring in the next few feet.

Humble Oil & Refining Company was coring for the sand just above 2300 feet in its P. E. White 1, Section 58, while Magnolia Petroleum Company was waiting on cement in its Wilson 4, Section 134, after setting casing around 2300 feet.

Three and one-third miles southeast of this field, in Duval County, John F. Camp and Stanolind Oil and Gas Company's Hubbard 2, Section 73, BS & F Survey, was preparing to core after reducing the hole at 2400 feet. This is the second well drilled on the wildcat block and is being watched with much interest.

Gulf Coast Field Developments

JACK LOGAN, *Staff Representative, Houston, Texas*

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First Salt Is Encountered On Barbers Hill West Flank

Houston.—Salt has been encountered for the first time on the west flank of Barbers Hill field in Chambers County, Texas. Sun Oil Company's O. K. Winfree 2 entered salt at 4800 feet, was still in it at 4979 feet, and somewhere between this latter depth and 5087 ran out of the salt into a sandy shale. The only flank well in that general sector of the field which has been known to have encountered salt is the Humphries Corporation's Barber A-6, properly located in the northwest corner of the field. O. K. Winfree 2 is an east offest to Sinclair Oil & Gas Company's Smith 3.

For the first time in several weeks, Barbers Hill this week was without a completion. However, several wells are due for completion there within the next two weeks, and initial production therefrom is expected to boost the field's daily average production above the present figure of 19,300 barrels, the latest estimate of the American Petroleum Institute.

Nacogdoches County Well Test Salt at 3001 Feet

Houston.—After a futile test of what turned out to be a salt water sand at 3001-3009 feet, Ginter et al continue drilling below 3150 feet in shale on Neil Wells 1 in the M. H. Chireno Survey of Nacogdoches County. The well was washed with heavy mud for one hour and with water for four hours. It was swabbed down 150 feet with no show of oil or gas. Then an attempt was made to pump it with sucker rods. Neil Wells 1, which is located about 15 miles southeast of Nacogdoches, set 12-inch casing somewhere above the depth of the test.

Big Indian Oil Company, drilling the wildcat J. N. Stewart 1 in the Black Jack community of Nacogdoches County, has shut down the well at 1420 feet after having cemented 12½-inch casing at 360 feet.

Sequoia Oil Company's Nacogdoches County test, Robert Douglas 1, sometimes referred to as Eliza Boyd Estate 1, is drilling below 3843 feet in chalk. This wildcat was started as a 4000-foot test of a 4000-acre block. It is located 1½ miles south of Cushing, 6072 feet from the north and 6336 feet from the east line of the A. Oliver Survey.

Fort Bend County Wildcatters Are Active With Three Tests

Houston.—Fort Bend County wildcatters are active this week with drilling under way on three out of four wildcat locations in the Thompson dome district, sometimes referred to as Clear Lake, and on one wildcat located between Long Point and Damon Mound.

Cullen and West and Gulf Production Company, joint operators who this year recovered from the Thompson dome prospect commercial production, are drilling below 4600 feet in blue sand in their George 2 on that dome. This well topped a salty oil sand at 3813 feet and was still in same at 3824 feet. Lockwood-Sharp 3-A, another project of these operators, is drilling below 3130 feet after having set 145 feet of 12½-inch casing. Lockwood-Sharp 2-A, another of the Thompson dome wells, is drilling below 4750 feet, at which depth shale was logged. Cullen and West and Gulf Production Company's Lockwood-Sharp 4-A is a derrick.

Stone and Wyman, drilling the wildcat Beard 1 between Long Point and Damon Mound, in Fort Bend County, reported a depth early in the week of 1187 feet in sandy lime. At 692 feet this wildcat was drilling in gumbo.

Harris County Wildcat Logs Miocene Formation

Houston.—Wood R. Alexander et al, drilling the wildcat test Herman Hale 1 in the R. A. Hanks Survey of Harris County, report having encountered the lower Miocene at 2073 feet this week. Drilling is progressing below 2206 feet in gumbo, according to information given out September 29 by the operators. Herman Hale 1 is located 1058 varas east of the southwest corner of the Littlefield Survey, along the north line of the Hanks Survey, thence south 790 varas, thence south 74 degrees, west 26 minutes for 70 varas.

Announce Locations for Two Jefferson County Tests

Houston.—Locations were announced last week for two wildcat tests in Jefferson County. One was for Humble Oil & Refining Company's Ross B. Nelson 1, four miles southeast of the town of Cheek. Ross B. Nelson 1 is located 550 feet south and 70 feet west of the northeast corner of the William Rice Survey, in the Ross B. Nelson 1072-acre tract. The other location was for John I. Pipkin and Elan's Broussard 1, located 800 feet north of the south line and in the center of the east and west lines of the M. Broussard 206-acre tract in the McGaffy Survey.

Terrebonne Parish Well Is Good for 100 Barrels Hourly

Houston.—South Louisiana oil activities this week were given a boost by completion of The Texas Company's Lake Barre 13 at Lake Barre, Terrebonne Parish, for an initial production estimated at 100 barrels per hour through a half-inch choke. Lake Barre 13, located on one of the several salt dome prospects turned over to The Texas Company by Louisiana Land and Exploration Company in November, 1928, at latest reports was yielding 34 gravity oil from a sand topped at 3670 feet. Total depth of Lake Barre 13 is 3684 feet, and the well is pulling the oil through 45 feet of screen, set on bottom. Exact location of Lake Barre 13 is 2200 feet south and 575 feet east of the northwest corner of Section 30-21s-20e.

Humble Oil & Refining Company, which has been drilling since early July on Lake Washington 2 in Plaquemine Parish, abandoned the well this week a little below 1900 feet. Salt was encountered in Lake Washington 2 at about 1540 feet, continuing to about 1570 feet; 13 feet more of this formation was topped at 1777 feet. The well topped a light oil sand at

1295 feet, and another sand showing a small amount of oil at 1555 feet, where salt water was also encountered. Lake Washington 2 is located in the Lake Grande Ecaille district of the parish, 11,275 feet north and 3349 feet west of the southeast corner of Township 20s-26e.

In Rapides Parish, Pelecan Natural Gas Company abandoned Long Bell Lumber Company 1 in gumbo at 3350 feet. This well is located in the Glermeria district, in Section 3-1n-3w.

Gulf Spuds In Test in Pierce Junction Field

Houston.—Gulf Production Company this week spudded in Taylor 33 at Pierce Junction field, Harris County, in an effort to extend in a southerly direction the productive area of that field. Taylor 33 is located in the James Hamilton Survey No. 52, on the south flank of the field, in a wide stretch of undeveloped stretch of acreage.

Southern Petroleum Company, holding company for properties of Elvin Tilton and W. H. Perot of Houston, is drilling below 2125 feet in the middle miocene on M. C. Barnes et ux 1 at Pierce Junction. This well, which is located 15 feet from the north line and 25 feet from the west line of Lot 49, W. H. Jones 50-acre subdivision, B.B.B.&C. R.R. Survey tract 1028, is on the northwest flank of the dome. M. C. Barnes et ux 1 is a west offset to Navarro Oil Company's Perry 2 and a south offset to Rio Bravo Oil Company's G.H.&S.A. 102. Southern Petroleum Company has on this lease two wells which are producing 100 barrels per day. One of them has produced about 10,000 barrels per month for the past nine months, and the other has yielded a total of about 10,000 barrels.

Houston.—Two wildcat projects in Nacogdoches County which never reached the spudding stage were abandoned this week. Churchill and Armstrong, who were reported over a period of a month or more as moving in a rig on Mack W. Hart 1, tore down the derrick and abandoned the location, which was approximately seven miles west of Nacogdoches. L. E. Trout and Dixon, who had built a derrick for what was to have been known as Blount 1, also tore down the derrick and abandoned the location. Blount 1 was located 150 feet each way out of the northwest corner of an 140-acre tract in the E. D. Williams Survey.

Houston.—Humble Oil & Refining Company's Sargent 2, wildcat at Moss Bluff dome, Liberty County, is still standing after having had a slight show of oil in sand and shale at 5931 feet.

Houston.—R. D. Moore's Abney Estate 1 in Angelina County, a well which had difficulty with a cementing job of 6⅝-inch casing at 1290 feet following shows of oil at that depth and at 1350 feet, was abandoned this week at the latter depth after having tested salt water. Abney Estate 1 is located 50 feet north of Block 6, just out of the city limits of Lufkin in the John Quinalty Heirs Survey.

Houston.—Exchange Petroleum Corporation has spudded in and set surface casing on a wildcat located in the Slaigle district of Vernon Parish, Louisiana. The test, known as White Grandin Lumber Company 1, is located in Section 29-3n-7w. The 12½-inch casing was set at 210 feet, and at latest reports the well was drilling in gumbo below 637 feet.

Houston.—State Production Company contemplates a second test of Chacahoula dome in La Fourche Parish, Louisiana, as evidenced this week by location of a well to be known as Swamp Starck et al 2 in Section 71-15s-15e

Well on Beck Dome, Victoria County, Now Ready to Test

San Antonio, Texas.—Houston Oil Company's Konrad 1, on the Beck salt dome, Victoria County, was preparing to test an oil and gas showing at total depth of 5018 feet after more than a month's delay with a set of tools lost in the hole. The well was drilled into formation, mostly heaving shale, which showed gas and some oil and 8¼-inch casing was set at 4740 feet. The well is 1000 feet east of the northwest corner of the T & N O Survey and is north of Victoria.

The well's original depth was 5003 feet, but was drilled to 5018 feet after sidetracking the core barrel.

In the McFadden gas field, in the southern part of the county, United Production Company's McFadden 5-A is in the process of completion. It has the sand at 3754-59 feet, which showed for a good producer on a drill stem test.

The Texas Company's McFadden 3, John Rine Survey, also in the McFadden area, has set casing for protective purposes at 4278 feet. It has had several showings at shallower depths and a blow-out is possible.

Second Large Gas Well is Completed in Welder Area

San Antonio, Texas.—A second large gasser has been completed in the new Welder gas field of San Patricio County, five miles northeast of Sinton. The latest producer is Welder Oil Corporation's Welder 2, which is showing 1600 pounds pressure in a sand at 3648-60 feet; no gauge has been made on the volume.

Location was made by the company for Welder 3, 900 feet northeast of the new producer, and at last reports surface casing had been set around 400 feet.

Atlantic Oil Producing Company is making a deal for about 3000 acres on the Welder Ranch about 1½ miles from the field and will drill a well.

Aransas Oil Company, which is composed of virtually the same parties as the Welder concern, drilled the Welder 1 earlier in the summer and got a 30,000,000 cubic foot gasser at 3660 feet. Welder Oil Corporation was then formed and its first well showed salt water. The second, however, has been completed as a dry gasser.

Geological Societies Plan Joint Meeting October 3

Houston.—A joint meeting of the San Antonio and Southwestern geological societies will be held October 3 in Room 12 of the Biology building, University of Texas, Austin, according to S. W. Horne, secretary of Southwestern Geological Society.

The meeting, which will convene at 10:30 a.m., is for the purpose of presenting and discussing two papers: "The Geology of Hays and Comal Counties, Texas," by Dr. F. L. Whitney, and "A Major Inter-Continental Sheer Zone and Its Effects on Texas Geology," by C. L. Baker.

Houston.—Shortly after this issue of THE OIL WEEKLY goes to press, Vacuum Oil Company will have completed its Cameron-Meadows 2 in the Cameron-Meadows semi-wildcat district of South Louisiana as a producing well, barring mechanical difficulties.

Cameron-Meadows 2, located 1900 feet west and 3120 feet south of the northeast corner of Section 21-14s-13w, and 500 feet south of Cameron-Meadows 1, in Cameron Parish, has cemented seven-inch casing at 5230 feet. Total depth of the well is 5270 feet.

Louisiana--Arkansas Field Notes

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Zwolle's Newest "Hot Spot" Adds Fifth Well During Week

Shreveport. — Zwolle's newest "hot spot," a recently opened one mile southwest offshoot of the Zwolle townsite part of the field, maintained its perfect production record during the last week when Coates Petroleum Company's Towery 1, NE SE NW Section 1-7-13, Sabine Parish, a quarter of a mile west of the four other producers in the field, was completed at 2425 feet, flowing eight barrels per hour of oil, through quarter-inch choke with 50 pounds back pressure. The oil is coming from breaks in the chalk from 2390 to 2425 feet. This test topped Zwolle marl at 2132 feet where six-inch casing was cemented and topped chalk at 2150 feet. It is the fifth producer of five tests drilled in that part of the field.

Three new locations were announced in that part of the field last week, all being in Section 1-7-13. Coates Petroleum Company will drill Hale 2, NW SW NE of the section; Dengail Oil & Gas Company made location for Nulton 3, SW NW NE of the section; and Fred Stovall made location for Nulton 2, SE NE NW of the section. All three operators are offsetting producers which they own.

These three locations with three announced in the southeast part of the Zwolle east field, gave that area six locations for the week. Crescent Drilling Company has spudded Byrd 1, Section 12-7-11 and set surface casing, 10-inch at 100 feet; Lyons and Neely are rigging up for Byrd 3, Section 1-7-11; and in the same section Eddie Self has spudded Jacobs 2.

Urbana North Offshoot Well Is To Be Tested

Shreveport.—Wilson and Chapman, late last week, were ready to start testing Henry Norman 1, SE NE Section 3-18-13, in the north offshoot of the Urbana district of Union County, Arkansas, that state's deepest oil field, at total depth of 3683 feet, with 23 feet of sand which showed 2400 feet of oil in a recent drill stem test from 3560 to 3583 feet, in a space of 17 minutes; 6⅝-inch casing was cemented at top of the sand at 3560 feet.

Three miles west of this part of Urbana production, Joe Modisette and associates during the last week announced location for Webb 1, NW SE Section 6-18-13, Arkansas' only new test for the last week.

Late last week Lion Oil Refining Company and associates' first 6000-foot test for the Smackover field, Guy P. Hayes A-9, NE NE Section 4-16-15, Union County, was drilling hard brown lime at 5687 feet; elevation is 96 feet.

North Louisiana Records Two Gassers During Week

Shreveport.—Two gassers, one in the Morehouse Parish part of the Monroe gas field, and the other in the Richland Parish gas field, comprised the total of new production added in proven areas of North Louisiana during the last week. Carbon Consolidated's Fee 5, Section 21-20-4e, Morehouse Parish, was gauged at 19,368,000 cubic feet of gas with 580 pounds rock pressure, at total depth of 2155 feet in gas rock. Southern Carbon Company's Rosengrant and Ducomb 9, Section 18-17-6e, Richland Parish, gauged 38,952,000 cubic feet with 875 pounds pressure, at total depth of 2440 feet in shale.

An outside test to the south of the Richland gas field, Richland Operating Company's Baremore 1, Section 19-16-7e, Richland Parish, was abandoned as a dry hole, though it showed a little gas, at total depth of 2450 feet in shale.

Aside from six new locations in Zwolle, there were but two others during the last week in North Louisiana. Southern Carbon Company is rigging up for Rosengrant and Ducomb 7, Section 24-17-5e. Mid-West Production Company, Incorporated, of Shreveport, built derrick for a wildcat in the Bayou Pierre wildcat district of Natchitoches Parish. This test is Brown 1, NE SE Section 34-11-10. Shows of oil and gas at both the Nacatosh and Tokio horizons have been secured in several wildcat tests drilled in recent years in this locality.

A wildcat in north Bossier Parish, Flint River Oil Company's DeMoss 1, SE NE Section 22-22-13, was abandoned as a dry hole at total depth of 3089 feet in sandy shale; 6⅝-inch casing was cemented at 3028 feet.

Two Mississippi Wildcat Tests Attract Attention

Jackson, Miss.—Wildcat tests in two widely separated parts of Mississippi are arousing interest as a result of a check of the contacts of formations encountered in comparison with other tests drilled in the same general areas.

Arkansas-Louisiana Pipe Line Company, drilling Brandon Halls Farms Incorporated 1, Section 32-8n-1w, Adams County, in the city limits of Natchez, in Southwest Mississippi, late last week was drilling Minden formation at 2744 feet after topping the Vicksburg at 1550 feet, elevation being 282 feet. A little gas was noted and salt water appeared at the contact of the basal Moody's marl part of the Jackson, and Yegua at 2123 feet. This test is checking about 200 feet lower than Glassell and associates' Stowers 1, Section 29-8n-2w, Adams County.

In East Central Mississippi, near the Alabama line, Gulf Refining Company's Long-Bell A-1, SW SW Section 10-2n-16e, Clark County, with elevation of 380.3 feet, topped the Midway black shale at 2290 feet and the Midway chalk at 2633 feet, and late last week was drilling chalk at 2920 feet. The same company's Box 1, Section 11-2n-15e, with elevation of 221.2 feet, topped the black shale at 2205 feet and the chalk at 2635 feet, the shale being 430 feet thick in the Box 1, as compared to 343 feet in Long-Bell A-1.

Jackson Field Records Two Locations and One Producer

Jackson, Miss.—One new gas producer and two new locations were reported during the last week in the Rankin County, southeast part of the Jackson gas field. In NE SW Section 12-5-1e, Muse and Muse completed Harding 1 at total depth of 2396 feet in Midway chalk, making an estimated gas yield of 35 million to 40 million cubic feet daily. Midway black shale was topped at 2307 feet and chalk at 2391 feet; elevation is 270 feet (estimated.)

Grandstaff and associates built derrick during last week for East 1, SE SW Section 12-5-1e; and Orr and associates laid derrick pattern for Casey 1, NW SW Section 12-5-1e.

INTERNATIONAL PETROLEUM
IN REVIEW

ROY E. LEIGH, *Foreign Editor, New York*

Amtorg Seeks to Establish Credit Fund

New York City.—Peter A. Bogdanov, chief executive of Amtorg Trading Corporation, Soviet purchasing agency in the United States, suggested in recent press interview that his organization may initiate negotiations for the establishment of a revolving fund to finance Soviet purchases in this country.

In the absence of some such arrangement, he said, Soviet purchases in this country must continue to decline, as more favorable credit facilities have been made available to his government in England, Germany, Italy, and elsewhere. He stated that the longest terms offered by American manufacturers average about six months, while credits extending over 2½ and three years are available in Europe.

Reference was made to a second five-year plan now in course of preparation, and to the prospect of an indefinite series of five-year plans extending far into the future. Subsequent industrial plans, he said, will cause an increased demand for foreign machinery and equipment.

Activity in Lower Austria Reported

New York City.—Reports from Vienna relate details of what we would describe as a leasing boom occuring in Lower Austria since the discovery of oil in small quantities during 1930. So far, some 24,439 applications for prospecting rights have been filed.

Gas Is Found in British Columbia

Vancouver, British Columbia—Gas has been discovered in commercial volume at Stevenson, a point about 15 miles from Vancouver on Lulu Island. Plans are being drawn for supplying gas to the city of Vancouver.

Deep Drilling Planned in Quebec

Quebec, Canada.—A report of the Quebec Bureau of Mines states that operators who have taken out licenses for drilling in the St. Lawrence Lowland are making provision to drill to a depth of 6000 feet. The Trenton limestone, which forms the objective of their search, has been found to be covered with a greater thickness of shales than was first anticipated; and, in consequence, this objective formation has not yet been reached.

Colombian Crude Production Report

Bogota, Colombia.—Output of Tropical Oil Company, Colombia subsidiary of Imperial Oil, of Canada, is averaging around 48,080 barrels per day, according to recent report.

Exports of crude petroleum from Colombia totalled 8,965,909 barrels during the first half of the current year, and a figure of 1,340,899 barrels is quoted as covering exports made during the month of July.

Of the half-yearly total, approximately 70 per cent was consigned to the United States, and approximately 25 per cent to Canada.

Drilling in Czechoslovakia

New York.—The Czechoslovakian Ministry of Public Works has negotiated for the purchase of modern equipment for deep well drilling, with a view to establishing its drilling operations on an all-year basis in the fields of Bardejov, Zlorov, Vysni Komarnik, and Mikov, where former operations have been of an irregular nature, often suspended during the winter months—it has been reported. Plans are also being drawn for the drilling of test wells near Jasina and Luh, where geological investigation is now in progress.

Success in Germany Is Reported

Hannover, Germany.—Erdoelbergbau, Aktien-Gesellschaft, of Celle, near Hannover, reports the successful completion of two wells with an aggregate initial production of 250 barrels per day during the month of August. These wells, which are located in the Oberg field, are said to produce oil containing approximately 25 per cent of gasoline.

Latvia Adopts Alcohol Mixture

Riga, Latvia.—Effective October 10, 1931, importers and refiners of gasoline offered for sale in Latvia will be required to install apparatus and tanks for the mixing of alcohol with gasoline sold under the new law governing sales of motor fuel. Dehydrated alcohol produced from potatoes will be supplied by the Government Alcohol Monopoly at a price estimated as equivalent to 10 2/3 cents gold per litre, or approximately 46 3/4 cents per U. S. gallon, which is roughly equivalent to the local price of gasoline.

Peruvian Output Is 32,150 Barrels Daily

Lima, Peru.—Recent reports indicate that oil production in Peru is averaging around 32,150 barrels per day, approximately 80 per cent of that figure representing the output of International Petroleum Company, Ltd., subsidiary of Imperial Oil, Ltd., the remainder being accredited to Lobitos Oilfields, Ltd., of London.

Soviet Oil Barred From Argentina

Buenos Aires, Argentina.—As a result of the recent raid on the offices of Yuzhamtorg, Soviet trading organization in Buenos Aires, government officials have revoked the Soviet agency's permit to do business in Argentina. It is reported that Yuzhamtorg was found to have made preparations for an elaborate selling campaign to introduce Russian oil products into Argentina, to be sold at prices substantially below those quoted by Yacimientos Petroliferos Fiscales, Argentine government oil-producing agency.

Soviet Subsidiary Enters Asphalt Paving Business

Moscow, U. S. S. R.—Persazneft, Soviet oil distributing agency in the Kingdom of Persia, has been awarded a contract for laying asphalt pavement on the streets of Teheran, capitol of Persia.

▼ INTERNATIONAL PETROLEUM IN REVIEW ▼

Mexican Petroleum Taxes Fixed

New York City.—B. L. Freifeld, secretary of the Association of Producers of Petroleum in Mexico, with headquarters here, has received advices from Mexico City to the effect that values and taxes on crude oil and petroleum products have been fixed as follows for the month of September. (U. S. currency equivalents are calculated on the basis of 3.3808 silver exchange.)

Values

Fuel oil	16.35	silver pesos per cubic meter	=	$0.7697 per bbl.
Gasoline	72.25	silver pesos per cubic meter	=	.0809 per gal.
Kerosene	46.89	silver pesos per cubic meter	=	.0525 per gal.

Production Taxes

	Tax per Cubic Meter (Silver)	Tax in U. S. Currency
Crude (sp. gr. 0.93 = Be. 20.38)	2.081 pesos	$0.09786 per bbl.
Crude (sp. gr. 0.96 = Be. 15.68) or heavier	1.212 pesos	0.5699 per bbl.
Fuel Oil (sp. gr. 0.95 = Be. 17.21)	1.864 pesos	.08765 per bbl.
Gasoline (crude)	2.890 pesos	.00324 per gal.
Gasoline (refined)	1.445 pesos	.00162 per gal.
Kerosene (crude)	2.813 pesos	.00315 per gal.
Kerosene (refined)	1.407 pesos	.00158 per gal.

The production tax on fuel oil will vary approximately .00719 per barrel for each degree of specific gravity above (deduct) or below (add) 0.95 specific gravity.

The production tax on light crude will vary approximately .00802 per barrel for each degree of specific gravity above (deduct) or below (add) 0.93 specific gravity.

Combined Production Tax (for September) and Export Tax (in United States currency)

	Production	Export	Total
Crude (sp. gr. 0.93 = Be. 20.38)	$0.09786	$0.07949	$0.17735 per bbl.
Crude (sp. gr. 0.96 = Be. 15.68) or heavier	.05699	.04928	.10627 per bbl.
Fuel Oil (sp. gr. 0.95 = 17.21)	.08765	.05962	.14727 per bbl.
Gasoline (crude)	.00324	.00472	.00796 per gal.
Gasoline (refined)	.00162	.00189	.00351 per gal.
Kerosene (crude)	.00315	.00151	.00466 per gal.
Kerosene (refined)	.00158	.00057	.00215 per gal.

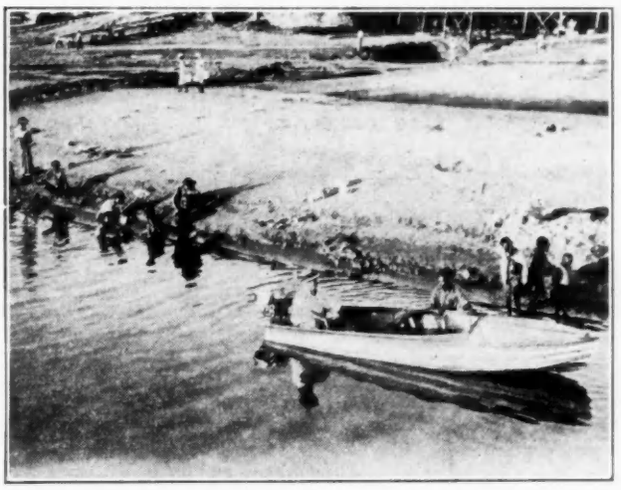
Dutch West Indies Imports and Exports

New York City.—Imports of crude petroleum into Curacao and Aruba totalled 47,006,265 barrels during the first half of the current year; and exports of crude and refined products totalled 42,340,939 barrels, as follows:

Crude oil	2,445,060
Gasoline	8,702,058
Lubricating oils	337,269
Fuel oil	26,467,478
Gas oil	4,389,067

ROBERT HARCUS

Field Superintendent for Burmah Oil Company, Ltd., at Chauk, Upper Burmah, is making his headquarters at Long Beach, California, while on holiday in the United States.



"B. R. EMRICK, technical adviser to Burmah Oil Company, Yenangyaung, Upper Burma, is an outboard motor enthusiast who challenges all comers in week-end races on the Irrawaddy River. He also uses his outboard motor boats to visit remote up-river wildcat operations."

Competitive Balance Shifts in Britain

London.—The suspension of gold payment by the Bank of England probably will have many repercussions in and on the oil industry, not all of which can be foreseen at once.

First, it may cause a shift in the competitive balance between Anglo-Persian, Anglo-American, and Russian Oil Products, Ltd.

It may also happen that consumers in Great Britain will be required to accept an advance in the cost of petroleum products, since all of their supplies come from over-seas.

Russian Oil Products, Ltd., British distributing agency for the Soviet Naphtha Syndicate, heretofore has served as one of the Soviet Union's most fertile media for the acquisition of gold and foreign "valuta" in exchange for Russian commodities. Thus it appears that R. O. P.'s remittances for the account of Moscow may be reduced in value to a degree equivalent to the depreciation of sterling exchange.

Soviet authorities, however, are not unacquainted with the subject of discounts in general, having done business largely on that basis since the resumption of international dealings; and, while they are prohibited from shipping gold out of England, it is yet possible to purchase New York and other exchange—at a price.

Anglo-American Oil Company, Ltd., subsidiary of Standard Oil Company of New Jersey, would seem to be adversely affected, since its sources of supply are based in countries operating on gold basis.

Royal Dutch-Shell companies would appear to be virtually in the same boat with the American company, since its producing subsidiaries in the United States, Venezuela, Roumania, and the Dutch East Indies all operate on a gold basis.

If any advantage is to accrue to any of the major participants in the British market, Anglo-Persian would appear to be the lucky company, to the extent that its oil is produeed, transported, and refined largely within the economic scope of sterling. While this company's oil actually is produced in a foreign country—Persia—yet its financial transactions are carried on independently, to a degree, of Persian exchange.

Completions for Past Week in U. S. Fields

▼ ▼ ▼

TEXAS

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
JOINER FIELD—		
British-American Oil Prod. Co., U. Cooper (Mayfield) 1	5000	3644
Jim Cloud, Inc.-Dana O&G Co., S. Stone (26-ac) 3	6500	3690
Duncan & Holt, Cansler 1	8000	3780
E. S. Earle et al, L. J. Pinkston 1	10,000	3662
East Texas Ref. Co., Grissom 2	8400	3681
J. B. Wilson 1	8500	3638
Gulf Prod. Co., W. L. Murphy 5	5500	3780
Gulf States Dev. Co., S. S. Cook (8-ac) 1	8000	3751
Haynes Drlg. Co., Lee 3	6000	3636
Humble O&R Co., O. Blackwell (74.4-ac) 4	10,000	3704
J. R. Box (125-ac) 2	12,000	3764
M. D. Caldwell (73.1-ac) 2	12,000	3744
J. E. Glover (130-ac) 4	10,000	3752
D. C. Joiner (74.11-ac) 2	9000	3707
W. P. Moore (55-ac) 3	11,000	3710
Mid-Kansas O&G Co., M. M. Cross (531-ac) 2	3000	3613
S. H. Moore (200-ac) 5	10,000	3655
Owenwood Oil Corp., Mullins (60-ac) 2	9000	3772
Pansy Oil Co. (S. J. Taylor), J. Minschew 1	12,000	3787
R. M. V. Oil Co., Birdwell 3	7500	3630
Sinclair O&G Co., F. B. Wilson 3	7000	3646
M. T. Smith & Son (Earlewine), S. S. Cock 1	9000	3787
Staley-Wynne & Co., M. M. Hale 1	3000	3710
Stanolind O&G Co., O'Quinn (80-ac) 5	10,000	3785
Sun Oil Co., O. W. Knight 3	5000	3636
Mason (59-ac) 1	4500	3649
A. M. Sutton et al, Maxie Wilson (8.97-ac) 1	9500	3795
The Texas Co., J. B. Stone (50-ac) 3	4000	3648
KILGORE FIELD—		
Atlantic Oil Prod. Co.-Byrd & Frost, Inc., Andrews 4-B	6000	3620
W. Smith 3	8000	3594
Arkansas Fuel Oil Co., K. Brown (100-ac) 1	7400	3585
Cordova Union Oil Corp. et al, J. Bean 3	5000	3645
Crude Prod. Co. (Phillips Bros.) Joe Gibson 1	225	3808
Golding-Murchison Oil Co., L. P. Griffin 3	7000	3545
Gulf Prod. Co., C. E. Christian (278-ac) 5-C	8300	3755
C. E. Christian (278-ac) 6-C	4000	3724
Griffin Davis 1	9000	3565
Wm. Jernigan (100-ac) 9	10,000	3632
Gulf & E. L. Smith Oil Co., M. T. Cole (187-ac) 2	8000	3549
Humble O&R Co., J. A. Knowles 7	9000	3596
M. E. Minor (150-ac) 2	3500	3654
J. N. Peterson 13	11,000	3654
H. Sexton 1-C	9000	3731
Nat Hunter Prod. Co., W. A. Hindman (11-ac) 1	10,000	3638
Lone Star Oil Co., Griffin 1	500	3592
Magnolia Pet. Co., L. A. Griffin (44½-ac) 3	8600	3567
Mullendore & Berry, A. Spear 1	7200	3580
O'Neill et al (Ark. Drlg. Co.), Dodson 2	7500	3624
Republic Prod. Co., C. E. Christian (50-ac) 3	12,000	3651
J. S. Rushing et al, Geo. Thompson (10-ac) 2	8000	3683
Shell Pet. Corp., John Douglas (138-ac) 2-B	7000	3637
John Douglas (138-ac) 3-B	2500	3670
J. S. Elder 2-B	7700	3602
J. S. King (62½-ac) 2	4000	3640
J. A. Knowles (65-ac) 4	8000	3661
W. D. Lacey 1	5000	3614

For Tabulation and Comparison See Market Section

Company, Well and Location	Initial Production Bbls.	Depth
Rosa Russell 7	7500	3748
Sinclair O&G Co., M. T. Cole 11	6000	3560
Sun Oil Co., J. S. Elder (75-ac) 1	8400	3576
C. H. Hilburn-Chas. Lloyd (133.7-ac) 6	8200	3640
The Texas Co., W. Davis 3	7000	3600
R. B. Walls 1	10,000	3703
Tidal Oil Co., J. S. King (80-ac) 3	15,000	3585
J. S. King (80-ac) 4	12,000	3592
W. P. Moore 3	7500	3653
W. H. Tew & Elder (Maer & Smith) F. C. Bunytn 1	9000	3738
LONGVIEW FIELD—		
Arcadia Ref. Co. (was Dumas et al), A. O. Phillips (25.2-ac) 1	10,000	3665
Arkansas Fuel Oil Co., Mary Christian (19⅛-ac) 1	8600	3594
Atlantic Oil Prod. Co., W. P. Duncan (154.7-ac) 1	8500	3685
Bagley & Pet. P. L. & Storage Co., Sam Kay 1	9000	3658
Barnsdall Oil Co.-Houston Oil Co., McGrede 6	11,000	3603
Bishop Corp., W. T. Todd (28-ac) 1	8000	3600
Byrd & Frost, Inc., G. E. Adams (11.1-ac) 1	15,000	3640
Delaney & J. B. Stoddard, J. C. McKinley (20-ac) 2	8000	3630
W. R. Duke (H. M. Acre) et al, S. J. Brooks 1	10,000	3611
Gulf Prod. Co., F. C. Fishburn (200-ac) 3	12,000	3503
Hamil & Smith et al, D. Mayer 2	7500	3626
Houston Oil Co., Clements (41-ac) 2	7000	3605
Humble O&R Co., J. F. Boles (99½-ac) 2	6500	3642
A. Carter (92-ac) 2	10,000	3647
A. Carter (92-ac) 3	5500	3633
E. Edwards (77⅞-ac) 2	8400	3656
T. B. Harris 2	9500	3522
Mary Killingsworth 1	8600	3665
Mae Mattox (61.6-ac) 1	9000	3671
Inland Oil Co. (John T. Callahan), M. Fenn (17-ac) 1-B	9000	3640
Magnolia Pet. Co., L. J. Everett (171.1-ac) 3	8500	3682
A. J. Green (41.1-ac) 2	6800	3578
H. Hampton (160-ac) 6	10,000	3669
L. E. Orms (16.3-ac) 1	9000	3565
Shell Pet. Corp., H. Hampton (169-ac) 1	7800	3635
C. C. Landers (107-ac) 1	6000	3721
M. C. Salter 1	7000	3723
Sinclair O&G Co., Aiken 2	8500	3595
Southport Ref. Co. (Lube Oil Co.), Thad Snoddy 1	4500	3620
Sun Oil Co., M. C. Saterwhite (82.7-ac) 4	12,000	3615
The Texas Co., Woods 2	8400	3580
Tidal Oil Co., Jones (80-ac) 2	8000	3672
Y. Oil Co., A. M. Kinsel (94-ac) 1	15,000	3656
Yount-Lee Oil Co., J. C. McGrede (40-ac) 1	9000	3592
Maude Smith 1-A	11,000	3566

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
GRAY COUNTY—		
M. Finston et al, J. S. Morse 2	85	2500
Humble O&R Co., R. E. Hughey 1	¶29	2749

EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ANGELINA COUNTY—		
R. D. Moore, Abney Estate 1, Jno. Quinalty Hrs. sur	*	1350

SOUTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ATASCOSA COUNTY—		
Thomas Draper's Trueblood 1	*	652
BEXAR COUNTY—		
Gatlin Oil Co.'s Beck 8	10	712
CALDWELL COUNTY—		
Mills & Chapman's McMahon 1	*	2490
GUADALUPE COUNTY—		
Humble O&R Co.'s Sue Denman 1-C	480	2532
Linne et al's Linne 1	*	1670
MEDINA COUNTY—		
Medina O&R Co.'s Taylor 2	5	351
Yancey Dev. Co.'s Faesler 1	*	1945
SAN PATRICIO COUNTY—		
Welder Oil Co.'s Welder 2	¶25	3660
Jacob, Buzzini & Pickett's Baldwin 1	*	4020
Baldwin 2	*	3810
ZAPATA COUNTY—		
Pray & Chamberlain Prod. Corp., Inc.'s, Garza 4	75	1361

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
BECKHAM COUNTY—		
Heiden et al, Montgomery 1, nec nw 15-9-23w	*	3455
CREEK COUNTY—		
Central Commercial, Charco 2, nwc ne ne 9-17-10e	¶¼	1057
Bailey et al, Weaver 1, nwc sw 18-19-9e	140	2237
M. S. Hughes, Flinchin 2, nec sw sw 11-19-9e	90	2384
F. R. Billingslea, Wilson 1, swc se sw 15-15-8e	*	3868
W. S. O'Hair et al, Barnett 1, ne nw sw 14-16-10e	*	3065
OKLAHOMA COUNTY—		
Champlin Ref. et al, Central 4, sw nw se 3-11-3w	3380	6402
Phillips Pet. Co., Qualls 1, swc nw ne sw 10-11n-3w	7170	6530
Eason Oil Co., Rodesney 1, nwc se 15-11-3w	7940	6524
MUSKOGEE COUNTY—		
H. L. Jolly et al, Brown 2, nec 8-15-18e	*	1710

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
COWLEY COUNTY—		
Shawver et al, Vestal 2, sec nw 19-24-3e	¶3	1477
Smith et al, Johnson 1, sec sw, 6-33-5e	*	660
Dunlop et al, Thompson 1, cnw nw, 5-33-5e	*	696
McPHERSON COUNTY—		
Emerick et al, Severtson 1, nw se se, 9-19-2w	120	2953
Sith-Ash and Shell, Kaegi 1, nwc, 21-19-1w	¶21	2963
RENO COUNTY—		
Palmer, Phillips et al, Goering 1, (wo) 1-23-4w	165	3376
RICE COUNTY—		
Muth Bros., Freeman 1, (wo) sec 4-21-6w	30	3511
RUSSELL COUNTY—		
Stearns, Streeter and Hall, Miller 1, se se se 30-14-3w	100	2904
STEVENS COUNTY—		
Colorado Gas & Utilities, Wrench 1, c se 27-31-38w	¶16½	2601

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
LONG BEACH—		
Dixie Oil Corp., White 1	2000	7945
Shell Oil Co., Stakemiller 8	100	5363
Two-In-One Oil Co., Hughes 1	200	7980
POTRERO—		
Beloil Corp., Coffin 1	1000	6510

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
TIOGA COUNTY—		
Williamsport Oi & Gas Co., Bensonburg 1	¶3	1706

WEST VIRGINIA

CALHOUN COUNTY—		
Edward Smith & Co., Evans 1	¶¼	2157
CABELL COUNTY—		
Larner Gas Co., Swann P-86	¶½	3540
BOONE COUNTY—		
Owens-Illinois Glass Co., Powell Hrs. 6	¶½	1846
Turtle Lick Gas Co., Hill 1	¶¼	1276
The Pure Oil Co., Federal Coal Co. 53	¶½	3047
DODDRIDGE COUNTY—		
W. L. Travis, Stutler 1	¶¼	1960
KANAWHA COUNTY—		
Winifrede Gas Co., Fee 13	¶¼	3160
Fee 14	¶½	2080
MINGO COUNTY—		
United Fuel Gas Co., Cotiga Dev. Co. 4332	¶¼	4848
ROANE COUNTY—		
I. T. Storts & Co., Tanney 1	¶¼	1739

SOUTHEASTERN OHIO

MORGAN COUNTY—		
Penn Contracting Co., Smith 4	¶¼	1568
NOBLE COUNTY—		
Everet Harbacher, Calland 2	¶¼	1845

CENTRAL OHIO

ASHLAND COUNTY—		
Ohio Fuel Gas Co., Culler 1	¶¼	....
BELMONT COUNTY—		
A. C. Peters & Co., McLaughlin 2	¶¼	1977
GUERNSEY COUNTY—		
W. C. Urban & Co., Brock 1	¶¼	1110
HOLMES COUNTY—		
Lydic Oil & Gas Co. Close 2	¶¼	867
HURON COUNTY—		
Gebbhart & Co., Rogers 1	¶¼	....
FAIRFIELD COUNTY—		
City Natural Gas Works, Hummel 1	¶¼	670
Patton & Bishop, Reynolds 2	¶¼	740
KNOX COUNTY—		
Upham Gas Co., Workman 1	¶¼	2702
LORAIN COUNTY—		
Dillon & McFredericks, Squire 1	*	2685
MEIGS COUNTY—		
Ohio Fuel Gas Co., Custard 1	¶1½	1080
SUMMITT COUNTY—		
Wiser Oil Co., Shiltz & Bailey 1	¶¼	3573

NORTHWESTERN OHIO

WYANDOT COUNTY—		
Cook, McPheron & Miller, Ramsbury 2	¶½	1500
John Greege & Co., Flechsenhar 1	15	1584

KENTUCKY

DAVIESS COUNTY—		
Crouse & Co., Evans 1	*	....

NORTH LOUISIANA

MOREHOUSE PARISH—		
Carbon Consolidated, Fee 5, 21-20-4e	¶19¼	2155
RICHLAND PARISH—		
Southern Carbon Co., Rosengrant & Ducomb 9, 18-17-6e	¶39	2440

MISSISSIPPI

RANKIN COUNTY, (Jackson)—		
Muse & Muse, Webb 1, 12-5-1e	¶35	2396

Arkansas none.

SOUTH LOUISIANA

VINTON FIELD—		
Vinton Petroleum Co., Matilda Gray 11	3600	3650

Just *off* the press

PETROLEUM DICTIONARY

for

Office, Field and Factory

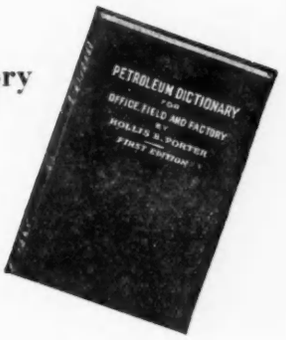
by

HOLLIS P. PORTER

Member of

American Society of Mechanical Engineers.

American Petroleum Institute.



FIRST EDITION

Before deciding to publish this dictionary, a thorough search was made by the author while preparing lectures to be delivered to the students of the Petroleum Engineering School of The University of Tulsa, which revealed that there was no publication which defined in a satisfactory manner many of the words and terms used in the several departments of the petroleum industry. It was also observed, that many employees in offices were in need of a ready reference which would give them some light as to the meaning of technical as well as non-technical expressions, and words so often found in correspondence by and between individuals of the several departments of the industry. These facts furnished the inspiration for this publication. It is often difficult, and in many cases impossible, even with the best library facilities to find definitions for many of the words which have recently been introduced. This may cause some difficulty in understanding the meaning to one unfamiliar with the subject, or, to a particular branch of the industry.

This dictionary is offered to those who are employed or interested in the petroleum industry for the purpose of removing this difficulty.

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Permits Granted for New Wells

▼ ▼ ▼

For Tabulation and Comparison See Market Section

CALIFORNIA

DEVIL'S DEN — Signal Oil and Gas Co., Signal-Lincoln 1, 15-26-19.

KETTLEMAN HILLS — Kettleman North Dome Association, No. 81, 2-22-17; No. 36, 20-21-27.

KINGS COUNTY—Valley Exploration Co., Veco 7-12, 12-23-19.

LONG BEACH—E. J. Preston Pet. No. 33, 13-4-13.

NEWPORT—Superior Oil Co., Irvine 1, 27-6-10.

OKLAHOMA

CREEK COUNTY—Cal Cul Oil Co., Holleyman 1 se ne se 18-14-7e; Magnolia Petroleum Co., Talomasee 1(owdd) sec nw ne 3-16-7e; Texas Co., Weaver 7, nec se 13-19-8e.

LINCOLN COUNTY—Hilton Phillips et al, Philips 1, swc nw 2-14-3e.

MUSKOGEE COUNTY—K. D. Valentine et al, Newton 1 cse se 9-13-18e.

OKLAHOMA COUNTY—Phillips Pet. Rock Island 1 sw nw sw 35-12-3w; Argood et al, Levi 1 swc nw nw se 15-11-3w.

OKMULGEE COUNTY—Jordan et al, Anderson 3 nwc ne nw ne 28-12-14e; Sheldon and Staples, Skelton 6 nec nw sw se 15-13-12e; Mack Drilling Co., Anderson 1-A, swc ne ne 36-16-14e.

PAWNEE COUNTY—Burton and Holmes, Cunningham 1 nec nw sw ne 18-20-10e; T. E. Harris et al, Twedy 1 swc se ne nw 14-20-9e.

PITTSBURG COUNTY—J. E. Weible, Mattox 1 nec sw 5-8n-16e.

KANSAS

COWLEY COUNTY—Lehman et al, Page 1, nw sw se, 36-32-4e.

McPHERSON COUNTY—Lario O&G and Shell, Gratton 1, nec sw, 24-19-2w; Miller 2, nwc se, 24-19-2w.

RICE COUNTY — Muth Bros., Beyers 1, (owdd) nec nw, 21-19-9w.

RUSH COUNTY—Mid-Kansas O&G., Mohr 1, cnw, 14-18-16w.

LOUISIANA

NATCHITOCHES PARISH — Mid-West Prod. Co., Shreveport, E. H. Brown 1, 34-11n-10w, 230 ft s and 200 ft w of ne cor of se¼.

SABINE PARISH—G. M. LeGrand, Zwolle, Peterson 1, 34-7n-13w, 300 ft n and 300 ft e of center of sec. E. M. Self, Robeline, Jacobs 2, 1-7n-11w, 540 ft n and 420 ft e of sw cor sw¼ of se¼.

TEXAS

ARCHER COUNTY—Deep Oil Dev. Co., Wichita Falls, L. W. McCrory, 80, 1, B119, Amer. Trib sur, 330 ft from n and w lines.

BEE COUNTY—T. B. Slick Est., Oklahoma City, Okla., G. A. Ray, 156, 1, Geo. Kerr sur, 330 ft from w and 210 ft from s line.

BROWN COUNTY—M. L. Richards, Wichita Falls, C. A. Thomason, 83, 1, J. J. Clelland sur, sw corner.

CARSON COUNTY—Texoma Natural Gas Co., Amarillo, M. J. McLaughlin, 1, S 61, B 4, I&GN sur, 1335 ft from n and w lines of sec; H. Schafer, 2, S 64, B 4, I&GN sur, 1335 ft from s and e lines of s½ of sec; J. S. Harrison, 480, 1, S 40, B 4, I&GN sur, 1335 ft from n and w lines of nw¼. Canadian River Gas Co., Amarillo, J. Q. Bost, C, 640, 2, S 10, B Y2, TT Ry. sur, 660 ft from s and w lines of sec.

CALDWELL COUNTY—Ralph R. Ogden, Austin, S. Nealon, 200, 1, J. P. Gray sur, 150 ft from e and 1050 ft from s line.

CALLAHAN COUNTY — W. M. Dodds, Cross Plains, Williams, 50, 3, 2298 TE&L sur, 345 ft from n and 273 ft from w line.

CASS COUNTY — United North & South Dev. Co., San Antonio, A. Nickleberry, 48, 1, W. A. Irwin sur, 300 ft from n and e lines.

CHAMBERS COUNTY — Mills Bennett Prod. Co., Houston, Monoghela, 1, Blk. 15, H. Griffith sur, 50 ft from n and e lines.

DUVAL COUNTY—Duval Oil Corp., San Antonio, Bishop, 320, 5, S 135, GB&CNG sur, 1008 ft from w and 330 ft from s li of n½.

EASTLAND COUNTY—L. Teatsorth et al, Eastland, J. W. Carter, 160, 1, S 9, B 4, H&TC sur, 400 ft from e and 1760 ft from s li nw¼.

ECTOR COUNTY — Weekley Oil Corp., Fort Worth, E. C. Cowden, 40, 1, S 33, B 43, Twp. 2s, center of se¼ of nw¼.

ELLIS COUNTY — Clark Brooks, Fort Worth, G. W. Golladay, 50, 1, N. C. Hilburn sur, 300 ft from s and e lines.

GREGG COUNTY—W. J. May & Citizen's Oil Co., Gladewater, Gladewater, 1, M. Dillard sur, 143 ft from n and 120 ft from e li of Blk. 5. Fain-McGaha Oil Corp., Wichita Falls, E. W. Clements, 50, 3, C. Rhode sur, 330 ft from n and e lines. A. G. Oliphant, Longview, A. O. Godfrey, 26, 2, M. Van Winkle sur, 332 ft from n and 400 ft from e line. East Texas Refg. Co., Dallas, W. J. Hineman, 52, 2, G. W. Hooper sur, 330 ft from s and w lines. Flanagan Prod. Co., W. B. Walker, 91, 1, S. L. Davis sur, 330 ft from s and e lines. J. R. Smith, Longview, J. B. Doby, 21, 2, 330 ft from n and 215 ft from e line. Amerada Pet. Corp., Fort Worth, J. Freeman, 28, 1, M. Irwin sur, 347 ft from n and 330 ft from w line. F. H. E. Oil Co., Fort Worth, M. Christian, 16, 1, G. W. Hooper sur, center. Yount-Lee Oil Co., Beaumont, I. Denson, A, 3, D. Sanchez sur, 7150 ft from s and 5650 ft from w li of survey; J. Snoddy, 2, Wm. Robinson sur, 6430 ft from n and 475 ft from w li of survey; S. G. Smith, B, 1, Wm. Robinson sur, 9100 ft from n and 330 ft from w li of survey; L. E. Orms, 2, Wm. Castleberry sur, 5700 ft from n and 7600 ft from e li of survey. Taylor Fithen, Dallas, Thomas, 10, 1, C. H. Alexander sur, ne corner. W. C. Snyder, Tyler, B. Greer, 4½, 1, G. F. Penn sur, 309 ft from w and 156 ft from n line. J. M. Buchanan, Gladewater, G. W. Richey, 1, M. Dillard sur. Shell Pet. Corp., Dallas, C. C. Slaton, 100, G. W. Hooper sur, 365 ft from e and 330 ft from s line. Sinclair Oil & Gas Co., Fort Worth, M. T. Cole, 666, 12, S. Brooks sur, 330 ft from n and w lines. Wrightsman Oil Co., Longview, G. E. Adams, 34, 1, H. Hathaway sur, 330 ft from n and w lines. O. J. Ferrin, Dallas, E. E. Anderson, 19, 1, G. W. Hooper sur, 334 ft from n and 369 ft from e line. J. H. McMillan, Tyler, E. L. Walker, 10, 2, M. Dillard sur, nw cor; 1, 175 ft from n and e lines. Sigler & McCall, Nocona, M. Young, 50, 3, C. Rhodes sur, 400 ft from s and w lines. Arkansas Fuel Oil Co., Shreveport, La., F. K. Lathrop, 96, A7, Wm. Robinson sur, 300 ft from w and 200 ft from se line. Byrd-Frost, Inc., Longview, J. B. Watson, 22, A1, M. Van Winkle sur, 330 ft from n and e lines. Empire Gas & Fuel Co., Wichita Falls, J. W. Akin, 100, 1, W. H. Castleberry sur, 330 ft from n and e lines. Mrs. J. V. Bradley, Gladewater, M. T. Cole, 34, 2, E. M. Bramlette sur, 330 ft from e and 623 ft from n line; 1, 330 ft from w and 623 ft from n line. Vacuum Oil Co., Houston, J. H. Beavers, 75, 3, G. R. Rains sur, 330 ft from n and 250 ft from w line. G. W. Whitaker, San Antonio, Fee, 1, Castleberry sur, 600 ft w of center of e line. Joe Edgar, Georgetown, Stinchcomb, 3, 1, W. H. Hart sur, 200 ft from n and 66 ft from e line. Superior Oil Co., Dallas, A. Jones, 64, 2, G. W. Hooper sur, 660 ft w of No. 1. Jones-Doss Oil Co., Longview, E. Hagler, 30, 2, J. Caruthers sur, 450 ft from e and 330 ft from s line. Bishop Corp., Longview, E. G. Richey, 25, 1, C. Rhodes sur, 433 ft from e and 251 ft from s line. Roberts & Waddington, Fort Worth, J. A. Knowles, 8, 1, G. F. Penn sur, 150 ft from e and 450 ft from s line. J. F. Johnston, Longview, F. Banterelle, 3/4, 1, M. Van Winkle sur, 110 ft from w and 75 ft from n line. W. A. Southworth, Dallas, Fee, 2, 1, A. Park sur, 125 ft from e and 75 ft from s line. Bishop Corp., Longview, E. G. Richey, 25, 2, C. Rhodes sur, 402 ft from n and 432 ft from e line. Sakaba Oil Corp., Shreveport, La., C. H. Moore, 15, 2, M. Dillard sur, 160 ft from w and 200 ft from s line. Pruitt & Miles, Longview, A. H. Phillips, 2½, 1, L. J. Rigsby sur, 150 ft from n and e lines. Humble O&R Co., Houston, H. M. Lawrence, 100, 3, D. Ferguson sur, 1803 ft from n and 330 ft from e line; J. A. Knowles, 100, 8, M. Van Winkle sur, 330 ft from s and 330 ft from nw line; S. S. Laird, 127, B10, M. Van Winkle sur, 660 ft ne of No. 4; J. K. Edwards, 70, 7, D. Ferguson sur, 250 ft from n and 330 ft from e line; H. M. Lawrence, 100, 2, D. Ferguson sur, 1143 ft from n and 330 ft from e line; W. R. Hughes, 185, 3, D. Sanchez sur, 2385 ft from e and 41 ft from s line; S. S. Laird, 127, B 13, M. Van Winkle sur, 446 ft from n and 330 ft from nw line; B14, 660 ft e of No. 13; H. M. Lawrence, 100, 1, D. Ferguson sur, 330 ft from n and w lines. Sun Oil Co., Dallas, G. W. Tate, 64, 4, W. H. Castleberry sur, 996 ft from e and 293 ft from n line; R. C. Bramwell, B, 50, 1, P. McAnelly sur, 365 ft from w and 340 ft from s line; J. W. Akin, 166, 4, G. A. Thompson sur, 330 ft e of center of w line; E. C. Shoults, 100, 2, D. Ferguson sur, 330 ft from s and w lines. Magnolia Pet. Co., Dallas, L. J. Everett, 171, 7, L. J. Rigsby sur, 660 ft w of No. 6; W. E. Jones, 116, 4, D. Sanchez sur, 330 ft from s and e lines. Tidal Oil Co., Fort Worth, E. M. Nettleton, 48, 2, Jno. Ruddle sur, 310 ft from s and 330 ft from w line; M. G. Barton, 194, 3, S. P. Hollingsworth sur, 150 ft from s and 2000 ft from e line. Stanolind O&G Co., Longview, R. A. Adkins, 18, 2, G. W. Hooper sur, 330 ft from e and 244 ft from s line; Cox-Hamon, 72, 2, J. Ruddle sur, 330 ft from e and 250 ft from s line; G. F. Meadows, 50, 3, D. Sanchez sur, 250 ft from n and 330 ft from e line; J. F. Wilhite, 29, 4, G. W. Hooper sur, 200 ft from e and 330 ft from s line; F. M. Fonville, 100, 2, Wm. Tyndale sur, 330 ft from s and e lines; V. C. Shoults, 21, 2, M. Irwin sur, 354 ft from n and 330 ft from e line; 1, 354 ft from n and 330 ft from e line. Sun Oil Co., Dallas, M. T. Cole, 264, 1, A. Park sur, 330 ft from s and w lines. Empire Gas & Fuel Co., Wichita Falls, L. J. Rogers, 70, 3, G. A. Thomason sur, 330 ft from e and 250 ft from s line; J. W. Akin, 100, 2, W. H. Castleberry sur, 330 ft from n and 1490 ft from e line; O. Lockhart, 75, 2, P. W. Warraner sur, 330 ft from n and 338 ft from e line; L. A. Jeter, 121, 2, J. R. Crosby sur, 440 ft from e and 950 ft from s line; J. Bander, 93, 3, W. H. Castleberry sur, 330 ft from n and e lines.

GRAY COUNTY—Texoma Natural Gas Co., Amarillo, M. J. Purvis, 400, 1, S 151, B B2, H&GN sur, 1476 ft from n and 1320 ft from w line of sec.

GUADALUPE COUNTY — Fred Barnhill, Austin, H. L. Hoffman, 127, 1, 600 ft from n and 450 ft from w line.

HARRIS COUNTY — Southern Pet. Co., Houston, M. A. Barnes 1, S 1028, BBB&C sur, 15 ft from n and 25 ft from w line. Sun Oil Co., Houston, E. L. Bender, 25, W. B. Adams sur, se corner.

HOWARD COUNTY—Cardinal Oil Co., San Angelo, W. R. Settles, 20, 1, S 6, B 32, Twp. 2S, 957 ft from s and 209 ft from e line.

HOPKINS COUNTY—S. M. Stauffer, Oklahoma City, First Natl. Bk., 100, 1, Kilgore sur, north central part of lease.

HUTCHINSON COUNTY — Smith & McDannald, Electra, H. C. Pitcher, 80, 3, S 19, B M21, 330 ft from w and 990 ft from s line.

JEFFERSON COUNTY—Humble O&R Co.,

Houston, R. B. Nelson, 1, Wm. Rice sur, 550 ft from n and 70 ft from e line.

NUECES COUNTY—Southern Drilling Co., Refugio, P. V. Alexander, 32, 1, 200 ft from s and 150 ft from e line.

RUSK COUNTY—W. V. Hardin, Henderson, Bell, 47, 1, P. W. Holmes sur, 330 ft from n and e lines. J. L. Collins & Co., Corsicana, L. J. Pinkston, 23, 1, Cardena sur, 170 ft from s and e lines. British American Oil Prod. Co., Tulsa, Okla., J. D. Stone, 66, 4, M. J. Pru sur, 330 ft from n and e lines. Gulf States Dev. Co., Dallas, W. B. Giles, 5, 1, M. J. Pru sur, 155 ft from n and 290 ft from e line. Geo. Guthrie et al, San Antonio, Geo. Perry, 28, 1, Ryan & Cook sur, 335 ft from s and w lines. T P Coal & Oil Co., Fort Worth, A. Johnson, 20, 1, Geo. Berry sur, 330 ft from s and w lines. H. L. Hunt, Tyler, W. P. Moore, 82, 2, M. J. Pru sur, 330 ft from n and w lines. Empire Gas & Fuel Co., Fort Worth, C. O. Christian, 103, 2, Elliott & Simms sur, 330 ft from e and 232 ft from s line; 3, 330 ft from n and e lines. Byrd-Frost, Inc., Longview, H. P. Leverett, 23, 1, W. W. Simms sur, 330 ft from n and e lines. F. C. Clark, Tyler, L. Johnson, 3, 1, H. B. Dance sur, 111 ft from e and 245 ft from n line. Golding Murchison Oil Co., Dallas, A. D. Blackwell, 80, 4, M. J. Pru sur, 1252 ft e of No. 2; E. E. Thrash, 31, 2, F. Cordova sur, 318 ft from n and 330 ft from e line. C. L. McMahon, Tulsa, Okla., S. S. Laird, 45, 3, R. W. Smith sur, 600 ft w of No. 2. Mid-Kansas Oil & Gas Co., Shreveport, La., M. C. DeGuerin, 158, 1, J. B. Cadena sur, 1180 ft from w and 841 ft from s line; T. O. Warren, 60, 1, J. B. Cadena sur, 1330 ft from w and 547 ft from n line; M. Kangera, 60, 2, J. B. Cadena sur, 638 ft from n and w lines. R M V Oil Co., Henderson, J. A. Birdwell, 73, 3, M. J. Pru sur, 360 ft from n and 490 ft from w line. Byrd-Frost, Inc., Longview, H. P. Leverett, 23, 2, W. W. Simms sur, 335 ft from s and 150 ft from w line. Devonian Oil Co., Tulsa, Okla., W. O. Alford, 99, 3, H. B. Dance sur, 1044 ft from w and 330 ft from s line. R. L. Mayes, Henderson, H. P. Leverett, 8, S. J. Lindley sur, 222 ft from e and 330 ft from s line. H. L. Hunt, Tyler, E. B. Alford, 4½, 1, T. J. Meek sur, 118 ft from n and 330 ft from w line. Walton & Turbeville, Petus, C. E. Christian, 26, 2, R. W. Smith sur, 330 ft from s and w lines; 1, 330 ft from n and e lines. Tip DeArman, Tyler, W. B. King, 36, 1, M. McCabe sur, 330 ft from s and w lines. Navarro Oil Co., Houston, C. Young, 30, 1, T. J. Martin sur, 339 ft from s and 333 ft from w line. M. R. Irion, Dallas, J. R. Irion, 24, 1, J. Womack sur, 330 ft from s and e lines. P. H. Torrance, Tyler, Fee, 14½, 1, M. J. Pru sur, 150 ft from n and 278 ft from e line; 2, 330 ft from s and w lines. Humble O&R Co., Houston, M. Kangera, 125, B3, J. B. Cadena sur, 330 ft from n and w lines; J. H. Wooley, 201, 8, F. Cordova sur, 330 ft from n and 689 ft from e line; 9, 330 ft from n and 1349 ft from e line; S. A. Plowman, 228, A10, F. Cordova sur, 330 ft from n and 2535 ft from e line; A11, 330 ft from n and 1875 ft from e line; A. D. Blackwell, 82, 9, F. Cordova sur, 965 ft from n and 330 ft from w line; C. E. Christian, 277, 7, W. W. Simms sur, 330 ft from w and 2700 ft from s line; 8, 330 ft from n and e lines; A. R. Wooley, 41, 2, F. Cordova sur, 330 ft from s and w lines; J. N. Peterson, 101, 12, W. P. Chisum sur, 660 ft e of No. 7; J. W. Turner, 104, 5, A. Melton sur, 1219 ft from s and 330 ft from e line; W. A. Mullikin, 166, 4, T. J. Martin sur, 330 ft from n and 1762 ft from w line; B. L. Laird, 162, A5, I. Ruddle sur, 330 ft from nw and 331 ft from n line; First State Bk., 80, 4, Jno. Smith sur, 330 ft from n and e lines; J. Thompson, 80, 2, J. Smith sur, 330 ft from s and e lines; L. D. Crim, 248, 49, W. P. Chisum sur, se corner; 48, 330 ft from s and e lines; M. E. Minor, 150, 3, Wm. Killen sur, 330 ft from s and 1550 ft from e line; J. E. Sexton, 50, B2, T. J. Martin sur, 330 ft from s and e lines; J. W. Turner, 104, 4, A. Melton sur, 537 ft from s and 330 ft from e line; I. Holt, 64, A6, Geo. Berry sur, 416 ft from w and 330 ft from n line; R. H. Laird, 63, 4, W. P. Chisum sur, 1083 ft from w and 330 ft from sw line; J. E. Glover, 130, 6, A. Melton sur, 537 ft from n and 330 ft from e line; M. Kangera, 125, B6, J. B. Cadena sur, 1048 ft from w and 347 ft from s line; J. Thompson, 80, 3, Jno. Smith sur, 330 ft from n and e lines; C. J. Thompson, 116, 3, M. J. Pru sur, 330 ft from n and e lines; W. L. Price, 40, 3, J. M. Scott sur, 330 ft from s and w lines; J. Fuller, 115, 4, J. Ellington sur, 1338 ft from w and 330 ft from s lines. Adams & Lyles, Lockhart, L. P. Thrash, 26, 1, F. Cordova sur, 330 ft from n and e lines. Sun Oil Co., Dallas, H. Schuler, B, 72, 1, J. B. Cadena sur, 265 ft from w and 200 ft from s line; R. G. Mason, 39, 2, J. B. Cadena sur; O. W. Knight, 264, 4, D. Collins sur, 1017 ft from n and 350 ft from e line. Shell Pet. Corp., Dallas, J. H. Spivey, 88, 3, M. McCabe sur, 492 ft from w and 900 ft from s line. Magnolia Pet. Co., Dallas, N. Bean, 100, 1, J. Lewis sur, 330 ft from n and w lines; W. M. Jernigan, 80, 1, J. C. Shaw sur, 330 ft from n and 990 ft from w line.

REAGAN COUNTY — Big Lake Oil Co., Texon, University, 640, 6C, S 12, B 2, Univ. sur, 1000 ft from e and 1370 ft from s line sec.

SMITH COUNTY — Humble O&R Co., Houston, M. C. Thompson, 126, 3, I. Moore sur, 330 ft from n and 1110 ft from e line; J. T. Miller, 59, 1, D. Ferguson sur, 530 ft from n and 325 ft from w line; G. W. Johnson, 100, 2, G. W. Hooper sur, 330 ft from n and e lines; M. C. Thompson, 80, 3, I. Moore sur, 330 ft from n and 1180 ft from e line; J. K. Edwards, 281, 8, D. Ferguson sur, 1161 ft from n and 330 ft from w line; J. K. Edwards, 70, 9, D. Ferguson sur, 330 ft from s and w lines. A. J. Erlewine et al, Longview, M. Moore, 5, 1, Jas. Jordan sur, 272 ft from n and 212 ft from w line. Stanley Lewis, Tyler, S. S. Cook, 10, 1, B 10, J. Vargas sur, 200 ft from n and 159 ft from e line. Magnolia Pet. Co., Dallas, J. R. Wright, 78, 9, J. Vargas sur, 990 ft from w and 330 ft from s line. Arcadia Refg. Co., Tyler, J. R. Green, 55, 1, Jas. Jordan sur, 150 ft from n and e lines. E. E. Coombs, Tyler, B. Fox, 31, 2, A. Cormack sur, 660 ft nw of No. 1. A. J. Erlewine, Longview, Lipslate, 10, 1, Jas. Jordan sur, sw corner. C. E. Perry, Tyler, T. O. Wright, 12, 2, J. Vargas sur, 275 ft from s and 689 ft from w line.

SAN PATRICIO COUNTY — Welder O&G Co., Sinton, E. H. Wells, 100, 2, Portillo sur, 900 ft ne of No. 1.

SHACKLEFORD COUNTY—D. C. Pratt, Mineral Wells, Clarke, 40, 6, S S, Blind Ays. sur, 700 ft from n and 534 ft from w line.

TRAVIS COUNTY—Speed, Bass & Fuchs, Elgin, J. F. Nagle, 100, 1, Kimbro sur, 450 ft from w and 750 ft from s line.

UPSHUR COUNTY—R. W. Vierson, Okmulgee, Okla., Victory, 25, 1, E. A. Evans sur, 380 ft from n and 389 ft from e line. Mudge Oil Co., Tyler, J. W. Free, 113, 2A, D. Ferguson sur, 150 ft from e and 450 ft from s line. Holloway & Soden, Henderson, J. R. Penn, 80, 1, Jos. Manning sur, 240 ft from e and 200 ft from s line. Magnolia Pet. Co., Dallas, N. W. Blackwell, 90, 1, H. H. Edwards sur, 330 ft from n and e lines. W. L. Martin, Tyler, O. S. Smith, 15, 1, A. F. Shepherd sur, 330 ft from s and e lines. W. H. Peckham, Wichita Falls, T. Wells, 35, 1, G. W. Hooper sur, 330 ft from n and 511 ft from e line. Mead Bros., Inc., Tulsa, Okla., Walker, 28, 2, A. T. McGee sur, 330 ft from s and w lines. Humble O&R Co., Houston, J. T. Miller, 59, 1, D. Ferguson sur, 330 ft from w and 530 ft from n line; G. W. Johnson, 100, 2, G. W. Hooper sur, 330 ft from n and e lines; 3, 330 ft from n and w lines; E. O'Byrne, 45, C1, J. R. Watkins sur, 375 ft from e and 530 ft from s line.

WICHITA COUNTY—A. T. Wolfe, Wichita Falls, A. Daume, 42, N4, S.P. Ry. sur, 450 ft from e and 150 ft from s line. Regal Oil Co., Wichita Falls, H. M. Munger, 60, 1, M. Roberts sur, 150 ft from s and e lines.

YOUNG COUNTY — F. L. Roden, Wichita Falls, E. C. Keith, 100, 1, 268, TE&L sur, 150 ft from n and 1438 ft from e line. Wooten & Reed, Graham, J. L. Jordan, 20, 1B, 1903, TE&L sur, 1228 ft from e and 886 ft from s line of sec. King Royalty Co., Wichita Falls, J. F. Larimore, 160, 25, 2246, TE&L sur, 1050 ft from e and 766 ft from n line. Shaw Oil Corp., Dallas, T. J. Routon, 40, 4, 22, TE&L sur, 150 ft from n and 450 ft from w line. W. R. Fullerton, Wichita Falls, Kirkland, 40, 5, 2250, TE&L sur, 150 ft from n and 450 ft from e line. Wichita Prod. Co., Wichita Falls, E. C. Keith, 120, 2, 267, TE&L sur, 300 ft e of No. 1.

ZAPATA COUNTY—Trevino Oil Corp., Laredo, I. G. Trevino, 40, 11A, S 65, B 5, 700 ft n of No. 7.

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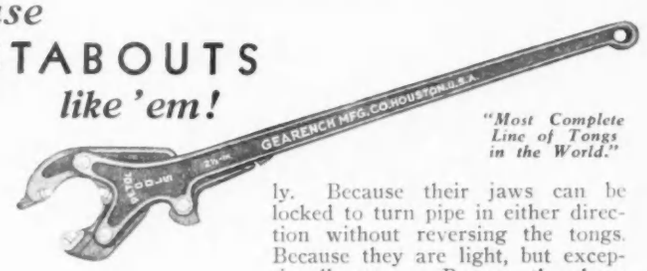

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ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn — abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd — shut down; sdtr — sidetracking; sp — spudding; sr — straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

Wildcat Reports From All Sections

OKLAHOMA

Note: Wells whose status have not changed since September 2, 1931, are omitted:

PITTSBURG COUNTY—Pattison et al, McDuff 1, sw nw se 32-9n-16e, dr 5758 ft.

ROGER MILLS COUNTY—J. J. Rook et al, Davis 1, cnw ne 4-11n-26w, sd 3240 ft.

WASHITA COUNTY — Snodgrass et al, Blocker 1 nwc 29-8n-19w dr 2270 ft; Burns and Prince, Dock 1 swc 21-8n-18w dr 1100 ft.

COAL COUNTY — W. E. McGraw O&G, Stiring 1 nec se 35-1n-8e sd 1846 ft show gas.

KANSAS

NOTE—Wells whose status have not changed since September 2, 1931, are omitted.

SUMNER COUNTY—Trees Oil Co., Springate 1, ne se sw, 6-34-2e, td 2214 ft, ur 10-inch. Spencer et al, Porter 1, ne nw, 6-33-4w, sd 3510 ft. Otstet et al, Warlow 2, cse nw se, 22-33-3w, dr 4415 ft.

HASKELL COUNTY—Trees Oil Co., Warner 1, c se, 29-30-34w, 6-inch at 2350 ft, co.

FORD COUNTY—Carter et al, Community-Everett 18, c ne, 22-20-21w, td 6088 ft, pipe stuck.

KINGMAN COUNTY—Panhandle Drilling Co., Wetherall 1, c se nw sw, 20-28-10w, rig.

STAFFORD COUNTY—Rosenthal, Stanolind & Amerada, Gray 1, c ne, 11-34-13w, sd 3260 ft.

HARVEY COUNTY—Liggett et al, Davis 1, c sw ne, 7-24-1e, sd 1400 ft.

FINNEY COUNTY—National Refining Co., Wells 1, sw c, 13-23-30w, dr 995 ft.

HARVEY COUNTY—J. P. Flannigan, Sheridan 1, c sw, 32-22-1e, td 3280 ft, fsh tools.

BARTON COUNTY—McCool et al, Isern 1, c sw se ne, 12-20-11w, 8-inch at 2640 ft, dr 2670 ft. Skelton Oil Co., Ott 1, c se se, 16-19-14w, td 2785 ft, co.

ELLSWORTH COUNTY—Keys et al, Gregory 1, swc, 23-17-9w, td 3025 ft, ur 8-inch. Milton et al, Kaster 1, se ne, 6-14-19w, 5-inch at 3560 ft, dr 3605 ft.

SHERIDAN COUNTY — Flo et al, Shoemaker 1, se sw sw, 27-27-26w, td 3280 ft, ur 8-inch.

RAWLINS COUNTY—Danciger et al, Unknown 1, sw c, 2-2-35w, 6-inch at 3495 ft, dr 3880 ft.

NORTHERN CALIFORNIA

KERN COUNTY

ANTELOPE VALLEY—Meridian Oil Co.'s No. 1, 11-9-15, dr out cmt for production test, td 3830 ft, 5¼-in cmt 3750 ft.

BUTTONWILLOW — Graham-Loftus Oil Co.'s Carmel 1, 20-27-22, dr shale 2515 ft. Milham Exploration Co.'s Crites 1, 8-28-23, will deepen from 2672 ft; Page 1, 6-28-23, deepened to 3221 ft and shut in as gas well.

BLACKWELL'S CORNER—Signal Oil and Gas Co.'s Lincoln 1, 15-26-19, will start new well.

DEVIL'S DEN—Cumberland Oil Co.'s No. 2, 17-26-18, dr shale 2200 ft.

LOST HILLS—General Pet.'s No. 1301, 13-26-20, fsh for drill pipe 4399 ft, sdtr at 3636 ft. Lincoln Drilling Co.'s Theta 1A, 12-26-20, dr shale and oil sand 5320 ft, will run small string and make production test.

McKITTRICK — California Oil Producers' No. 1, 30-30-22, dr shale 6300 ft. T. H. Purman's No. 1, 22-29-21, rigging rotary.

WEED PATCH—Osborn and Colter's Shell-Duff 1, 15-30-29, sd 3815 ft. Shell's Porter-Day 1, sd 8419 ft, plugged to 5789 ft.

SANTA BARBARA COUNTY

COAL OIL POINT — Bolsa Chica Oil Corp.'s Permit 191-1, 24-4-9, sd 5510 ft.

GOLETA—General Pet.'s More 3, 22-4-28, dr shale 6907 ft. Ohio's Oakley 1, 16-4-28, dr shale 3800 ft. Strickland and Tippett's Duncan 1, dr hard sand 4515 ft.

SANTA MARIA—Western Gulf's Bradley 1, 5-9-33, dr shale 7415 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north ,south, east, west; r—reaming; sd—shut down; sdtr—side-tracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

VENTURA COUNTY

HOPPER CANYON—Bardeen Oil Co.'s No. 1B, 13-4-19, dr oil sand 1582 ft.

OJAI—Rancho Reva Oil Co.'s No. 8, 28-4-23, dr shale 1482 ft. Knudsen and Smith's No. 1, 12-4-23, co 965 ft.

RINCON — Chanslor-Canfield Midway Oil Co.'s Hobson A2, 23-3-24, plugged to 7825 ft, flowing 150 bbls oil on conveyor, td 10,030 ft. Continental's Grubb 1, 23-3-24, dr out cmt 6640 ft, will make test.

SANTA PAULA — San Pedro-Pt. Fermin Synd.'s Kellerman 2, 13-4-21, will run cas and carry, td 3410 ft.

SOUTH MOUNTAIN — H. H. H. Bell's Lemon 1, 22-3-21, dr shale 800 ft.

MISCELLANEOUS

FRESNO COUNTY—Associated's Jacalitos 1, 22-21-15, sd 6198 ft.

KINGS COUNTY—L. W. Seymour's No. 1, 10-23-16, will deepen from 1150 ft. Knudsen and Smith's Avenal 1, 36-23-17, dr out cmt 4304 ft, 6⅝-inch cas cmt 4212 ft, will make test. Eagle Oil and Gas Co.'s No. 1, 15-23-20, rigging rotary. Kettleman Lakeview Oil and Gas Co.'s No. 1, 20-23-20, dr 1100 ft, will make test of 9⅝-inch cas.

MENDOCINO COUNTY—Twin State Oil Co.'s Soldani 1, 14-12-17, dr shale 7435 ft.

MONTEREY COUNTY—Pacific Inland Oil Co.'s No. 1A, 19-23-15, sd 1350 ft.

SAN LUIS OBISPO COUNTY—Trav-El Oil Co.'s No. 1, 7-32-22, dr hard sand 2414 ft. Central Coast Investment Co.'s No. 1, 1-28-12, rigging rotary. C. J. Schilling's Potter 1, 1-29-12, dr shale 1415 ft.

TULARE COUNTY—Ducor Pet. Co.'s No. 1, 14-24-27, dr shell 2200 ft.

SOUTHERN CALIFORNIA

ALHAMBRA—Yellowstone Oil Co.'s Huntington 1, 24-1-13, co to run 8⅝-in cas, td 3919 ft.

CALABASAS—L. W. Rucker's No. 1, 26-1-17, co 565 ft. Simi Oil Co.'s No. 1, 16-1-17, dr hard brown shale 1750 ft.

FULLERTON—Standard's Bastanchury 1, 23-3-10, co and pulling 8⅝-inch cas, td 8144 ft, will continue test of upper showings.

HERMOSA BEACH — Baxter Pet. Corp.'s No. 1, 6-4-14, rig. Westwood Oil Producers' No. 1, 6-4-14, pumping oil and water, td 2145 ft.

LOMITA—Higgins Brothers' Hamlin 1, m on cas 4781 ft.

NEWHALL—W. T. Ball's No. 1, 34-3-16, rig.

NEWPORT—Ajax Pet. Co.'s B. G. 1, 16-6-10, dr hard sand 5300 ft. Nuoil Co.'s Gessell 3, lcn. Superior's Irvine 1, 27-6-10, sp.

OCEAN PARK—Hines Pet. Corp.'s Happy Days 1, 8-25-15, dr shale 6750 ft.

OLINDA—Graham-Loftus Oil Co.'s G. L. 1, 8-25-15, sd 9241 ft.

PLAYA DEL REY—Cooperative Development Co.'s No. 1, 26-2-15, lcn.

SAN FERNANDO — El Caballero Estates Co.'s No. 1, 23-1-16, sd 1295 ft, will run string

ARKANSAS

CHICOT COUNTY—W. R. Smith's Lytle 1, 31-18-3, ta 2925 ft.

CLAY COUNTY—S. C. Jeffus, Tr.'s Underwood 1, 4-20-8e, sd 1252 ft.

CLEBURNE COUNTY—Donnell et al's Fee 1, 33-11-9, sd after testing sw 3515 ft.

CLEVELAND COUNTY — Crumm & Stilwell's Bell 1, 10-10s-12w, rigged up and sd.

COLUMBIA COUNTY—Kendall Oil Co.'s Fullenwider & Kitchen 1, ne ne 13-17-22, 8¼ cas 800 ft sd 804 ft.

CRAWFORD COUNTY — Ozark Nat. Gas Co.'s Hammonds 1, se se 29-10-29, sp dr 110 ft.

DALLAS COUNTY—Zepp O&G Co.'s W. E. Hillman 2, se ne 20-10-13, 10-in 135 ft dr 2375 ft hd sandy gumbo. Jno. James, Tr.'s Fordyce Lbr. Co. 1, 11-9s-15w, sd 2520 ft. E. C. Brewer, Tr.'s Hillman 1, 20-10-13, sd 2869 ft white sand.

Starr Oil Co.'s Cunningham 1, 11-5-16, 12½ cas 62 ft sd 1262 ft shale and bldrs.

JOHNSON COUNTY—Blackwell O&G Co.'s Wyver 1, 21-8-23, ta 5600 ft.

LAWRENCE COUNTY — Marguerite Dev. Co.'s Broadway 1, 31-17-1, lcn abn at 45 ft.

LINCOLN COUNTY — L. B. Cook, Tr.'s McGehee Pltg. Co. 1, 5-8s-7w, fsh 800 ft 40-in ds, td 2800 ft.

LITTLE RIVER COUNTY—Fay Roberts Oil Co.'s Russell 1, 25-12-29, lcn.

LOGAN COUNTY—M. W. Greesom's Parks 1, 21-8-24, sd 1309 ft. J. H. Flowers' White 1, 13-5-26, sd 3610 ft.

MILLER COUNTY — W. E. Noel et al's Dickson 1, 11-20-27, sd 1955 ft shale and gbo.

OUACHITA COUNTY—W. H. Copehaver et al's Berg 1, se se 13-15-17, 10-in 42 ft sd 300 ft gumbo.

PIKE COUNTY—Henderson et al's Tilyou 1, 26-8-24, ta 2920 ft. Kentucky-Ark. O&G Co. Inc.'s East 1, 13-9-23, 10-in 288 ft sd wo 8-in cas to shut off artesian water flow 338 ft.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26, sd 1536 ft. Waldron O&G Co.'s J. G. White 1, 17-3n-29w, sd 1860 ft (sec hole).

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29w, sd 1536 ft.

SEVIER COUNTY — Tri-State O&G Co.'s Bank of DeQueen 1, 34-8s-32w, rigged up and sd.

UNION COUNTY — Southern Prod. Co.'s Wingfield 1, 16-19-15, sd 2608 ft. Lion O. R. Co. et al's Guy P. Hayes A-9, ne ne 4-16-15, elev 96 ft dr hd brown lime 5687 ft (6000 ft test). Wilson & Chapman's Handley 1, 3-18-13, ta 3570 ft. Doty Norman A-1, 3-18-13, lcn. Doty Norman B-1, 3-18-13, lcn. Henry Norman 1, 3-18-13, tested 2400 ft oil good gas show 3560-83 ft, 6⅝-in cas 3560 ft arr drill plug td 3583 ft. Marine Oil Co.'s W. B. Thompson D-1, 3-18-13, rigged up and sd. Winn Est. A-2, 11-18-13, ta 3586 ft. Drillers Oil & Dev. Co.'s Pickering 1, 1-17-16, sp 10-in 42 ft dr 700 ft gumbo. Joe Modisette et al's Webb 1, nw se 6-18-13, lcn.

WASHINGTON COUNTY—Lincoln Lease Holding Synd's Townsite 1, 3-15-32, ta 1500 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft. O'Hara & Shetterley's Boyd 1, 2-16-32, ta 650 ft. Delbert Graves' Cunningham 1, 14-15-32, sd 602 ft gray sand.

VAN BUREN COUNTY — J. S. Martin's Scanland 1, 5-9-13, lcn abn at 50 ft.

YELL COUNTY—T. Luckett's Balcon 1, 36-7-12, sd 5710 ft.

WILDCATS

MISSISSIPPI

ADAMS COUNTY (Natchez District)—Ark. La. P. L. Co.'s Brandon Halls Farms, Inc., 1, 32-8n-1w, elev 282 ft, top Vicksburg 1550 ft, slight show gas and sw contact Jackson and Yegua 2123 ft, dr Minden 2744 ft.

CLARKE COUNTY (Quitman Dist.)—Gulf Ref. Co.'s Long Bell Lbr. Co. A-1, sw sw 10-2n-16e, elev 380.3 ft, 15½ cas 105 ft, 10-inch

956 ft, top black shale 2290 ft, top Midway chalk 2633 ft, dr chalk 2920 ft.

CHICKASAW COUNTY — Hightower & Golson's Fleming 1, 20-13s-33, sd while drive pipe, td 1640 ft.

HUMPHREYS COUNTY—Danciger O&R Co.'s Bellgrade Lbr. Co. 1, nw nw 29-14n-4w, 10-inch 659 ft, fresh water flow mudded off at 1409 ft, dr 1884 ft rock.

JASPER COUNTY (Bay Springs Dist.)—Bay Springs Pet. Inc.'s, J. H. Keyes 1, nw ne 21-2n-10e, sd 2360 ft Wilcox.

MONROE COUNTY (Amory Dist.)—Amory Dev. Co.'s Bourland 1, 2-15-19, ta in brown sand 3007 ft. P. J. McAlpine's Cowart 1, 2-12s-19w, set 5 3/16-inch cas on bottom at 3420 ft (corrected depth), dr lime 3445 ft, claim slight show gas. Associated Royalties' School Board 1, sw se 16-15-17, ta 60 ft.

NEWTON COUNTY (Newton Dist.)—Dalton Dev. Co.'s Majure 1, se se 25-6n-11e, rigged up and sd.

NOXUBEE COUNTY (Macon Dist.)—Thompson O&G Co.'s Donahue 1, se ne 25-16n-17e, elev 280 ft, 12½ cas 20 ft, r to reset 8¼ cas at 1605 ft, td 1715 ft sandstone; Ames 1, nw nw 24-16-18e, dk pat.

RANKIN COUNTY (Jackson Dist.)—Gulf Ref. Co.'s Hanna A-1, nw se 23-5-1e, 15½ cas 82 ft, 12½ cas 840 ft, top black shale 2471 ft, top chalk 2562 ft, running milling tool on fish bit at 1440 ft, drill pipe stuck, td 2815 ft. Atkisson & Dyer's Valentour 1, 18-5-2e, 12½ cas 60 ft, sd 405 ft. Majestic O&G Co.'s Elton Lbr. Co. 1, 10-4n-3e, dk. United Gas Pub. Serv. Co.'s McLaurin A-1, ne sw 8-5-2e, elev 280 ft, 12½ cas 105 ft, cemtd 9-inch cas 854 ft.

SCOTT COUNTY—Culley et al's Owen 1, 2-8n-9e, dk.

WARREN COUNTY (Vicksburg Dist.)—Eagle Lake O&G Co.'s Kiger 1, sw ne 9-18-2e, sd 2607 ft. United Gas Pub. Serv. Co.'s Tchula Store 1, sw se 33-15n-3e, 15½ cas 184 ft, coring for base Jackson at 590 ft.

WEBSTER PARISH — P. J. McAlpine's Henley 1, se nw 15-21-11e, cored gravel sd 1800 ft.

WINSTON COUNTY (Louisvile Dist.)—Miss. Drilling Co.'s Scarbrough 1, nw nw 15-13-14e, dr red shale 3985 ft.

ALABAMA

MADISON COUNTY — Tennessee Valley O&G Co.'s Fee 4, 1-4s-2e, no report.

SUMTER COUNTY (Livingston Dist.)—Forked Lightning O&G Co.'s Nixon 1, 30-20-2w, dk.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, sd while driv 8-inch pipe, td 925 ft, Wilcox; Hobson 1, 9-8-2w, ta 1450 ft. Oscar Brown's U. S. Land & Cotton 2, 25-3-2w, ta 700 ft.

TENNESSEE

DECATUR COUNTY—Chester County O&G Co.'s Montgomery 1, sd 2501 ft, gray limestone (2500 ft contract depth).

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH—		
Flint River Oil Co., De Moss 1, 22-22-13	*	3089
BIENVILLE PARISH—		
Arcadia Drilling Co., Atkins 1, 27-18-6w	*	2364
RICHLAND PARISH—		
Richland Operating Co., Baremore 1, 19-16-7e	*	2450

BIENVILLE PARISH — Arcadia Drilling Co.'s Atkins 1, 27-18-6w, dry abn, td 2364 ft.

BOSSIER PARISH — Andrews & Davlin's Nattin 1, 15-22-14, 4½ cas 2882 ft, flows small heads oil intermittently, wo, td 2890 ft. Rambaugh et al's Allison 1, 10-19-13, sd 1100 ft. Flint River O&G Co.'s De Moss 1, 22-22-13, 6⅝ cas 3028 ft, dry abn, td 3089 ft, sandy shale. Dr. Hankins et al's Newell 1, 12-19-11, sd 1100 ft. D. L. Perkins et al's Ardis 1, 13-15-11, top Nacatosh 944 ft, sd 1004 ft.

CADDO PARISH—United Gas Pub. Serv. Co.'s H. J. Bussa 1, 33-23-16, sp 12½ cas 375 ft, dr 1535 ft lime (5500 ft test). Pelican Nat. Gas Co.'s Cooper 1, 29-18-14, ta in red shale and lime 3648 ft. W. P. Wallace, Tr.'s, Cunningham O'Connor 2, nw nw 15-17-14, elev 236.5 ft, top Nacatosh 976 ft, top Blossom 2036 ft, dry at 2668 ft, bridged hole at 1000 ft, pulled and recemtd 6-inch cas at 989 ft, bailing to test Nacatosh, td 2668 ft.

CALDWELL PARISH—Monroe Pet. Corp.'s Burton 1, 36-12-2e, sd acct titles, td 2986 ft. Carter Bell et al's Taylor 1, 17-14-4e, 12½ cas 110 ft, sd.

CLAIBORNE PARISH—United Gas Pub. Serv. Co.'s Treadwell & Hawks 1, se nw 6-19-5w, 12½ cas 1517 ft, dr 3910 ft lime (upper Trinity test).

DE SOTO PARISH—Rellit O&G Co.'s Cannon Hrs. 1, 12-11-16, top chalk 1475 ft, base 18-10 ft, 6-inch with pckr 1470 ft, bailed dry, show gas 10 ft sand, sd wo, td 1965 ft. W. H. Weichert's Smith 1, 31-14-15, sd 2350 ft. E. T. Oakes' Johnson 1, 3-13-15, base chalk 2160 ft, claim gas show, dr 2815 ft shale, shells and lime (Tokio). Walters & Nicholson's Jim Guy 1, 3-11-13, sd 1260 ft. S. S. Meek, Tr.'s, Wagner 1, se se 5-12-14, 10-inch 101 ft, top hd chalk 1659 ft, base 2839 ft, cored sand and shale showing oil 2864-85 ft, tested 14 fourbles sw, td 2887 ft, ar core.

LA SALLE PARISH—Gulf Ref. Co.'s Tremont Lbr. Co. 1, ne sw 10-9-2e, 15½ cas 105 ft, 12½ cas 940 ft, dr 3000 ft.

NATCHITOCHES PARISH — Mid-West Prod. Co., Inc.'s, Brown 1, 34-11-10, dk. C. M. Talley et al's Taley 1, 29-11-10, sd 1380 ft. J. W. Cooper et a's Cooper 2-A, 35-11-10, sd 1515 ft.

OUACHITA PARISH—S. C. Wison et al's W. L. Williams 1, sw se 5-16-1e, lcn.

RED RIVER PARISH—Mack Jourdan Co.'s Lockett 1, 33-13-10, sd 2550 ft.

RICHLAND PARISH—National Gas Co.'s Singletary 1, 20-18-7e, sdtr ds 2515 ft. Richland Operating Co.'s Baremore 1, 19-16-7e, 8-

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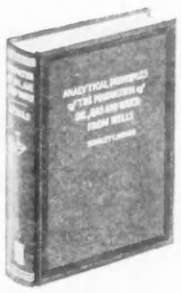

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inch 870 ft, 6-inch 2280 ft, dry abn, show gas, td 2450 ft shale.

SABINE PARISH—Langbridge Oil Corp.'s Stephens 1, se ne 17-9-11, tested 2 joints oil 3380 ft, tested 5 fourbles 39 grav oil and 5 joints mud in hour in sand at 3360 ft, claim sandy lime with oil saturation 4508-13 ft, arr set cas above 3 ft of sand at 3360 ft, td 3626 ft. J. J. Kean's Belton 1, 31-9-13, 8-inch 1590 ft, bailed dry now show 1605 ft, arr core ahead. H. W. Perritt's Bowman-Hicks 5, 2-7-12, 10-inch 100 ft, dr 2000 ft. A. H. Thames' Edwards Est. 1, 8-8-13, sd 1200 ft. R. L. Gay, Tr.'s, Long-Bell A-1, nw nw 10-8-13, tested 4 fourbles light oil and 5 fourbles sw 3585-3628 ft, tested 2 fourbles oil, 6 fourbles sw 3623-37 ft, dr 3750 ft. Coates Pet. Co.'s Bowman-Hicks A-1, sw sw 18-7-13, rig (formerly R. L. Gay's Bowman-Hicks 10); Bowman-Hicks 1, ne sw 2-7-12, oil show in Wilcox 1670 ft, top marl 2230 ft, top chalk 2300 ft, wosr, td 2441 ft; Sabine B-1, 1-7-12, 10-inch 100 ft, dr 1500 ft; Sabine 2, se nw 1-7-12, lcn; Towery 1, ne se nw, 1-7-13, 10-inch 100 ft, 6-inch 2132 ft, at top marl, top chalk 2150 ft, flowing eight bbls oil per hour on ¼-inch choke with 50 lbs. back pressure, flowing from breaks in chalk 2390-2425 ft, td 2425 ft; Stille 1, nw se 35-8-13, lcn; Hill 1, se se 35-8-13, lcn; Hale 2, nw sw ne 1-7-13, lcn. Fred Stovall's Nulton 2, se ne nw 1-7-13, lcn. Dengail O&G Co.'s Nulton 3, sw nw ne 1-7-13, lcn. Ohio Oil Co.'s Bowman-Hicks 9, 35-8-12, lcn; Bowman-Hicks 10, 35-8-12, lcn; Bowman-Hicks 11, 2-7-12, lcn. Diffie & Barrett's Lites 1, 348-11, 10-inch 105 ft, sd. Hudson & Bird's Walden 1, sw ne, 26-8-11, 10-inch 100 ft, sd for water 1800 ft. Hawkins et al's Moran 1, se ne 1-7-11, 400 ft oil in hole, wosr, td 2620 ft. Hawkins & Antoon's Newton 1, 1-7-11, wosr, td 2610 ft. Lyons & Neely's Duggan 1, 14-7-11, lcn abn. Texas Co.'s DeLatin 1, sw se se 3-7-11, 6-inch 2343 ft, dry at 2402, 2452, 2502, 2552 ft, arr test 2625 ft, bd lime. L. K. McGuffin's Byrd 1, 1-7-11, sd 400 ft. Zeke Lohman's McCormick 1, ne sw 2-7-11, sd 1606 ft. Ben Merritt, Tr.'s, Byrd 2, 1-7-11, 10-inch 88 ft, sd. Roy Baker's Sabine 1, 11-7-12, wosr, td 2548 ft. Gautier et al's Meshell 1, 30-8-12, wosr 2530 ft. Lanier & Dyer's Barthold 1, dry at 2521 ft in chalk, sd. Loring Oil Co.'s Bowman-Hicks 18, sw nw 15-7-12, 15½ cas 100 ft, r to bot, td 2775 ft; Bowman-Hicks 19, sw ne 16-7-12, 15½ cas 101 ft, dr 2520 ft. Pelican Nat. Gas Co.'s La. Long Leaf 10, nw ne 18-7-11, 10-inch 100 ft, 6⅝ cas 2335 ft, hf oil, wosr, td 2387 ft. G. M. LeGrand's Peterson 1, sw ne 34-7-13, sp 10-inch 40 ft. A. F. Tarver's Cutrer 1, 14-7-11, made two heads oil, wosr, td 2550 ft. Crescent Drilling Co.'s Byrd 1, 12-7-11, sp 10-inch 100 ft. Lyons & Neely's Byrd 3, 1-7-11, rig. Eddie Self's Jacobs 2, sw se 1-7-11, sp 10-inch 100 ft.

TENSAS PARISH—A. R. Willis' Curry 1, 39-11-12e, sd 3545 ft. L. A. Duvall et al's Martin Jacoby 1, ne ne 1-14-11, 10-inch 200 ft, dr 2170 ft.

UNION PARISH — Don Brooks, Tr.'s, Douglas 1, ne sw 9-22-2w, 12-inch 170 ft, top chalk 2317 ft, top red beds 3079 ft, sd wo 3509 ft gumbo.

VERNON PARISH — Exchange Pet. Co.'s White Grandin 1, ne sw 29-3n-7w, sp 12½ cas 210 ft, dr 750 ft.

LOUISIANA GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
PLAQUEMINE PARISH—		
Humble Oil & Ref. Co., Lake Washton 2	*	1905
RAPIDES PARISH—		
Pelican Nat. Gas Co., Long Bell Lbr. Co. 1	*	3352

ACADIA PARISH—Yount Lee Oil Co.'s H. Latrielle 10, Evangeline Dist., 47-9s-2w, dr and coring 7545 ft.

ASCENSION PARISH—McElroy Oil Co.'s Lacy 2, Sorrento dome offset, 20-10s-4e, wo dr st at 2420 ft, td 4070 ft.

CALCASIEU PARISH — Wilfred Lahay's Jardell 1, 2 mi ne Vinton, sd at 3750 ft. Success Oil Co.'s John Hewitt 1, 2 mi ne Edgerly field, waiting on dr pipe. Vacuum Oil Co.'s Wait 1, Iowa Dist., sdtr 6220 ft.

CAMERON PARISH—Calcasieu Oil Co.'s Landry 3, dr blew down and was reblt, dr 2910 ft rk; Watkins 26, E. Hackberry dist, dk reblt, dr 3010 ft. Jim Oil Co.'s Erwin 2, 13-12s-10w, E. Hackberry, lcn. The Texas Co.'s State 8, 13-12s-9w, dk blew down. Vacuum Oil Co.'s Cameron Meadows 2, Cameron Meadows Dist, set 7-inch cas at 5230 ft, td 5270 ft. Yount Lee Oil Co.'s Kelso Bayou 43, 13-12s-10w, E. Hackberry dist, bldg dk. R. E. Seiss, Trustee's, J. M. Vincent 2, Old Hackberry dist, 30-12s-10w, sd in rk at 2160 ft.

IBERIA PARISH—La. Land & Explo. Co.'s Vermilion Bay 7, Vermilion Bay dist, lcn. Jefferson Lake Oil Co.'s Lake Peigneur 23, New Iberia dist, 58-12s-5e, dr below 500 ft.

IBERVILLE PARISH—Standard Oil Co. of La.'s Myrtle-Grove-Wilbert 1, Bayou Choctaw dist, 52-9s-11e, dr gbo 1137 ft; Schwing 6, Bayou Blue dist, 74-9s-10e, dr 4615 ft sdy sh.

LA FOURCHE PARISH—State Production Co.'s Dibert-Starck-Brown A-1, Chacahoula dome dist, 71-15s-15e, recemt 5 3/16-inch cas at 1135 ft; Swamp-Stark et al 2, same dist, lcn in 71-15s-15e.

PLAQUEMNIE PARISH — Humble O&R Co.'s Cockrell Moran 6, 20-26e, lcn.

TERREBONNE PARISH—The Texas Co.'s State Bay Junop 2, Bay Junop dist, 28-21s-14e, ru; Lake Barre 11, Lake Bare dist, 36-21s-19e, r at lsn; Lake Barre 13, 30-21s-20e, sdtrkd old hole at 2400 ft, td new hole, 3680 ft, sd with oil show top 3668 ft, where tried to cmt 9⅝ cas, plg stopped at 3640 ft; Lake Pelto 6, Lake Pelto dist, coring at 2265 ft.

VERNON PARISH—Exchange Pet. Corp.'s White Grandin Lbr. Co. 1, Slaigle dist, dr 635 ft gbo.

MONTANA

CASCADE—Buscher & Cassady, Johnson 1, se 19-22-3e, dr 500 ft.

CHOTEAU — Williston-Shelby O&G Co., Flack 1, se 12-28-11e, dr 2845 ft.

GALLATIN—Galatin Valley Oil Co., 1-1n-4e, td 800 ft.

GLACIER—Fulton Pete Corp.'s Blackfeet 1, ne 28-38-12w, straightening at 2642 ft. Browning Dev. Co.'s Reickhoff 1, ne 3-34-6w, rigged. R. C. Tarrant et al, Haglund 1, sw 13-34-6w, dr bel 200 ft.

GOLDEN VALLEY — Golden Valley Oil Co., 28-6n-22, td 2050 ft, last report.

LIBERTY—Peoples O&G Co., First Nat'l Bank 1, ne 17-36-6e, to res 1285 ft. California Co. for Utopia Oil Co., se 11-33-6e, repairs 3244 ft. Northland O&G Corp., Yurman 1, sw 32-33-5e, cem off cave to dr deeper from 3700 ft.

ROSEBUD—Prairie O&G Co., 1-XX, 26-10-39e, cem 2551 ft.

SWEETGRASS—Shoshone Cons., nw 23-2n-15e, run 6-inch, td 5793 ft.

TETON—Andover Oil Co.'s Carlson 1, 5-24-4w, stand 150 ft. California Co.'s Sullivan 1, nw 34-27-7w, shot lost bit 1925 ft but cannot recover. Earl Oil Corp., Gad 1, se 22-22-8w, td 3730 ft. Trans-America Oil Co., State 1, sw 21-24-8w, sd for winter 920 ft.

TOOLE—Liquid Gold Oil Co.'s Elbert 1,

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ne 25-36-12, to run 5-inch to s. o. w. 2480 ft. Oregon Oil Synd., se 20-36-2e, dr 1200 ft.

YELLOWSTONE—Pan American Oil Synd., 23-2s-24e, dr 1300 ft.

WYOMING

CARBON—Midwest Refining Co., U. P. 27, 27-11-81, dr 3855 ft. Prairie O&G Co., Bunker Hill 1, 29-27-87, cored to 4987 ft. Vermillion Oil Co., sw 16-12n-99w, standing.

CONVERSE—Phillips Pete Corp., 27-32-69, dr 11th core test. John Ackard, 24-33-72, gas show 1490 ft, sd for winter. Otto Olston, 6-32-74, dr red beds.

CROOK—Northwest Gas & Oil Co., 6-54-60, spudding.

FREMONT — Wiebolt et al, 35-33-99, dd from 1850 ft. Ward O&G Co., 28-34-90, fight bentonite around 2200 ft. Yellowstone Oil Co.'s 14-38n-94w, dr bel 617 ft.

LINCOLN—Wyo. Prod. Co., 14-24-113, bottomed at 1700 ft.

NATRONA — Midwest's 11, nw 32-34n-77, stand 5340 ft. Midwest's Midway 1, 23-35n-79w, co 6003 ft. Summit Oil Co., 21-33-80, recem 1380 ft. Wyo. Imperial Oil Co., se 13-33-79, mvg in.

NIOBRARA—Globe Pete Corp., 2-39-61, dr 248 ft.

SHERIDAN—R. & D. Oil Co., se 21-57-87, sd 950 ft.

SUBLETTE—Cretaceous Oil Co., sw 7-28-113, stand 350 ft.

UINTA—Transwestern Petroleums, Ltd., 6-14-118, fsh tools 3100 ft. Clawson et al, 29-14n-118w, location. Park City O&G Co., 16-15n-113w, dr 2800 ft.

WASHAKIE—Ohio Oil Co., lot 14, 19-45-92, coring 7500 ft.

WESTON—LeFaivre Oil Synd., se 29-45n-68w, sd 1314 ft. Gose Synd., 28-47-65, wait for cable, td 4929 ft. Julius Peters et al, Witzell 1, se nw 30-46-64, set 8¼-inch at 1800 ft, dr ahead. Stockade Anticline Synd., 32-45-60, dr bel 750 ft.

COLORADO

ADAMS — N. M. Slatt's se 27-26-64w, sd 3720 ft.

ARAPAHOE—McDeb Drlg. Co.'s Fitzsimons 1, ne 7-4n-68w, td 5835 ft.

BOULDER—C. T. Ahlstrand's Woodley 1, ne 8-3n-70, dr 192 ft. Julius Williams, 6-1n-71w, dr 150 ft.

EL PASO—Utemore Synd., Cannon 1, ne 10-16s-66w, sd 1126 ft.

GRAND—Oil Mineral Lands, Inc., McElroy 1, sw 14-2n-81w, stand 545 ft.

JEFFERSON—Ruby Hill O&G Co.'s Braden 1, 24-4s-59w, recem to test gas, td 3934 ft.

LA PLATA—McGarr Pete Co.'s Pinon Mesa 1, ne 34-33n-12, prep to spud. Klem Pete Corp.'s Olbert 1, se 9-26n-12w, stand 3125 ft. J. W. Irwin & Co., Doescher 1, nw 29-33n-12, dr 2512 ft.

LINCOLN—Eastern Colo. Oil Corp.'s State 1, 36-14n-57w, tools lost 3425 ft.

MONTROSE — Uncompahgre O&G Co.'s Title & Trust 2, td 1021 ft.

MORGAN—Ind. Terr. Ilum. Oil Co., State 1, ne 16-1n-57w, td 5610 ft. Independent O&R Co., Schmidt 1, nw 19-6n-60w, rig. Juhan et al, Kent 1, sw 2-2n-57w, wtg cas 1200 ft. Colo. Ass. Oil Co.'s Pumphrey 1, se 14-4n-58w, dr 4100 ft. Tulsa-Fort Morgan Oil Co., Smith 1, sw 18-6n-60w, cellar. Prairie O&G Co., Mortier 1, nw 2-5n-60w, prep to move in.

PARK—So. Park Oil Co.'s Milligan 1, se 13-8s-76w, ur 8¼-inch to 2440 ft, td 2422 ft. So. Park O&G Co.'s Easche 1, ne 5-9s-76w, ur to 2440 ft.

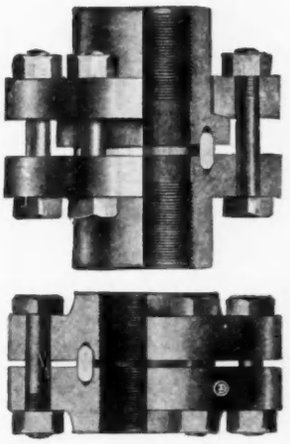
RIO BLANCO—California Co.'s Raven 1, se 20-2n-102, dr 2505 ft. Magnolia Pete Co.'s Maddock 1, se 9-2s-96w, dr 1510 ft.

ROUTT—Mid-Colo. Pete Corp., Omholt 1, ne 29-4n-87w, dr 530 ft.

WASHINGTON — Middlemist Oil Co.'s Middlemist 1, 14-4-56, stand 1510 ft.

WELD—Reiter-Foster's Johnson-Juhl 1, 14-6n-61w, cem 5475 ft. Aztec Corp., State 1, se 16-6n-61w, 15½ cem 115 ft. Retter Oil Co., Smith 1, 14-1n-68w, prep to test show, td 1171 ft. Conoco, Gadbois 1, sw 24-6n-61w, cem 5494 ft. Conoco, Briggs 1, sw 13-6n-61w, cem 6633 ft. Greeley Oil Co., Gadbois 1-B. nw 25-6n-61w, cem 168 ft.

ANOTHER SCOTCH STORY



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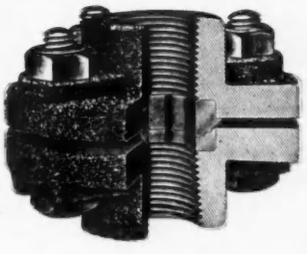

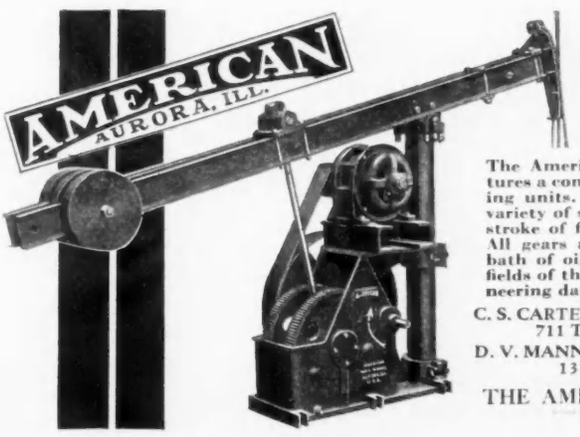

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NEW MEXICO

CHAVES—Neal et al, Russell 1, nw 21-14-25e, sd indefinitely 2320 ft.

BERNALILLO — Norrins Realty, Pajarito Grant, 22-9n-2e, stand 210 ft.

DE BACA—Saldo Dome Oil Corp., sw 6-4n-20e, stand cem 3181-89 ft. Landowners Oil Co., State 1, ne 16-1s-27e, dr at 4565 ft.

GUADALUPE—N. M. Prod. & Ref. Co., McMullen 1, 24-5n-16e, dr 2245 ft.

LUNA—Angelus Oil Mining Ass'n, 20-21s-10w, show oil 6170 ft.

McKINLEY—J. W. Halsell's 1, 17-18-9w, sd 3255 ft. Wms. et al's A. T. S. F. 1, se 19-18n-8, stand 1900 ft. United Kern Pete, Inc., sw 1-18n-11w, lcn. Dysart et al, Dysart 2, ne 14-14-10w, stand 1315 ft. Johnswood Oil Co., Hannett 1, sw 12-15n-10w, make repairs 897 ft.

MORA—Fulton Pete Corp.'s Santa Fe Dioxice Co., Wagonmound 1, ne 14-19-21, stand 1316 ft.

OTERO—Ernest et al's se 20-25s-7e, sd 1157 ft. Pasotero Oil Corp., Evans 1, sw 22-24s-12e, stand 1375 ft.

RIO ARRIBA—Berrenger et al's Hartman 1, ne 8-29n-7w, sd 825 ft. San Juan Pete Co.'s Gov't 1, se 14-30n-7w, sd 250 ft. Governador Oil Co.'s 1, 12-29n-7w, dr 1712 ft.

ROOSEVELT—Peterson et al, Good 1, ne 32-5s-30e, ready to spud.

SAN JUAN—Kutz Canon O&G Co., Day 1, se 20-28n-10w, wtg cas 3635 ft. Rio Grande Dev. Co. 2, 9-29-11, co 1330 ft. Continental Oil Co.'s Rattlesnake 24, 1-29n-19w, fsh 5711 ft. San Juan Leaseholds, Bowman 3, ne 30-30-15, sd 2685 ft. Reserve Oil Co., Reserve 3, se 36-22-14, est 25 bbls 814-20 ft. R. C. Oswell et al, 34-30n-11w, dr 910 ft. Wms. et al, Stallings 1, sw 17-25n-15w, stand 150 ft. Ortega et al, Westwater 2, ne 24-31n-18w, fsh, td 2460 ft. Dorothy Oil Co.'s Terwilliger 2, se 29-30-9, sd 1750 ft.

SANTA FE—Jones, Owsley et al, 5-10-9e, dr 266 ft.

EAST TEXAS

HARRISON COUNTY—O. H. Parkening's T. J. Taylor 1, Walter H. Payne sur, sd 2530 ft shale and shells. Ryan Cons. Pet. Corp.'s J. M. Furrh 1, T. J. Copelain sur, rig. J. M. Gholson's Bivins 1, T. D. Peterson sur, sd 3085 ft. Marshall O&G Co.'s J. R. Watson 1, Thos. Iden sur, 15½ cas 260 ft, dr 1850 ft (5000 ft test planned). Lloyd Oil Corp.'s Timmons 1, Jno. Findley sur, 10-inch 240 ft, dr 3060 ft lime.

MARION COUNTY—Rondeau & Hindman's Lindsay 1, Alex Albrought sur, sd 2450 ft. J. W. Hamilton's Wood 1, Alex Albright sur, sd 2380 ft. Claunch et al's Laun 1, Henry Fulgram sur, sd 300 ft. Sheldon et al's Brown 1, E. B. Fowler sur, sd 3750 ft.

PANOLA COUNTY—Dillon & Bradham's Baldwin 1, Hampton West sur, sd 1555 ft. United Prod. Corp.'s Steele 17, B. C. Jordan sur, lcn (Trinity test); Werner 11, D. B. Lewis sur, 15½ cas 383 ft, dr 3329 ft (Trinity test). Southwestern O&G Co.'s Vinson 1, C. T. Anderson sur, sd 3873 ft. Daisy O&G Co.'s Rucks Hrs. 1, Jno. Palmer sur, sd for water 3264 ft shale. Moses & Wallace's C. L. Daniels 1, Isabel Hanks sur, sd 650 ft. Hefter et al's Cameron 1, W. A. Lagrone sur, dk. Davidson et al's Latham 1, Wm. Rich sur, rig up for deep test, td 550 ft. Nelson et al's Williams 1, Jas. Hanks sur, 12½ cas 400 ft, sd lay water line, td 1500 ft, sticky shale. Stamps et al's Chadwick 1, Wm. Scantleberry sur, rig.

SHELBY COUNTY—Chapparral Oil Co.'s Holt 2, Matthew Moore sur, claim sand core, sd 3127 ft. E. L. Chapman's Pickering Lbr. Co. 1, C. F. Henry sur, blew out est 25 mil ft gas, killed, set 365 ft 7-inch cas, sr at 3350 ft, td 3893 ft. McRobie et al's Windham 1, Wm. Leach sur, 296-ac tract, 12½ cas 276 ft, top chalk 1930 ft, sd 2282 ft in chalk rock showing little gas, arr set 8-inch cas. Maulding et al's Frost Lbr. Ind. 1, A. B. Fountain sur, top PG 2900 ft, dr 3123 ft sandy shale. H. H. Gracey's J. A. Morrison 1, Wm. English sur, sd dr water well, td 2600 ft. I. M. Bradley et al's J. J. Asberry 1, G. W. Mitchell sur, sd 3280 ft sandy lime. T. A. Martin's J. A. Bush 1, Alfred Lindsay sur, dk and part of rig. Schultz et al's Hughes 1, J. Clay sur, possible base Georgetown 4146 ft, 12 fourbles drill stem and rock bit recovered, dr 4250 ft lime. C. H. Tautenhahn's J. C. Bogard 1, Thos. Baker sur, partly rigged up, sd 20 ft. Glidden & Stephenson's Pickering Lbr. Co. 1, Jonas Harrison sur, top PG 3059 ft, top Georgetown lime 3810 ft, sd wo in Georgetown lime 3854 ft. Ridgeway et al's Polley 1, Domingo Gonzales sur, sd wo cas 405 ft. Geo. L. Pace's Powers 1, Jno. Timms sur, dk. T. W. Tennent's Henry 1, Jno. Spradley sur, top PG 2100 ft, ds stuck, sd 3455 ft lime. K. H. Francis's Jno. Mims 1, Mary Smith sur, 13⅜ cas 40 ft, 10-inch cas 393 ft, top Midway 847 ft, dr 2950 ft. Smith et al's Carroll 1, J. A. Parker sur, 10-inch 180 ft, dr 3242 ft.

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CHEROKEE COUNTY—		
W. A. Stone et al (Pearson), E. M. Decker 1	*	5476
Walton Oil Co. (Lee et al), J. A. Singletary 1	*	2960
SMITH COUNTY—		
M. M. Rowan et al, Gibbons 1	*	3610
WOOD COUNTY—		
Paul Vitek Est. & Penn, Rosa Vogel 1	*	3800

SOUTH TEXAS

ATASCOSA COUNTY — Thos. Draper's Trueblood 1, John Neill sur No. 119, temp abn 652 ft. Glen Mathis' Mrs. G. M. Martin 2, Navarro sur, 3 mi s Amphion, 100 ft sw No. 1, dr 2940 ft.

BASTROP COUNTY—W. A. Allen's Birmingham 1, King and Millett sur, dr 1220 ft, last rept. Texas Dev. Co.'s C. H. Ray 1, Thos. Christian sur, 1½ mi ne Elgin, spud in.

BEE COUNTY—Cosden Oil Co. & Rowan and Moore's Freeland 2, John Pace sur, 1600 ft w Cosden pool, sd 4297 ft. Houston Oil Co.'s J. F. Portis 2, A. Smalley sur, sw Pettus pool, lcn. J. C. Hughes et al's P. H. Martin 1, John Lyford sur, just s Holzmark pool, prep to spud in. Humble Oil and Ref. Co.'s Laura Thompson 1, Garrett Roche sur, spud in. Lefevre & Buchanan's Geo. A. Ray 1, Jno. A. Williamson sur, 2800 ft w Damac producer, sw Pettus pool, dr 2108 ft. J. S. Mauldin's Mauldin 1, G. A. Kerr sur, just s Pettus townsite, sd 3930 ft. Mineral Oil Co. (Mauldin & Fisher) A. J. Kimball 1, Stephin Winship sur, Grayburg district, 7 mi sw Pettus, sd 3550 ft. T. B. Slick Estate's Geo. A. Ray 1, G. A. Kerr sur, sw Pettus pool, coring 3912 ft; Geo. A. Ray 2, Geo. A. Kerr sur, lcn; Geo. A. Ray 3, Geo. A. Kerr sur, lcn; United Prod. Co.'s Ray 39, T. Hanson sur, just ne field, dr 5537 ft. H. H. Weinert's Geo. A. Ray 1, Jno. A. Williamson sur, sw Pettus pool, w of Damac well, lcn.

BEXAR COUNTY—J. E. Anderson's Suburban Irrigated Farms 1, C. Logan sur, near Kirk, 20 mi sw San Antonio on Chicon Lake fault, dr 810 ft. Gatlin Oil Co.'s Beck 8, A. Montez sur, completed 10 bbls, sand 690-712 ft; Beck 9, A. Montez sur, lcn. Ewell Neill's J. M. Watson 1, Martinez sur, 10 mi s San Antonio, dr 200 ft. W. S. Rogers et al's L. Dunlop 1, Juan Montez sur, sd 612 ft. Schneider, Rees et al's Claussen 1, 12 mi no San Antonio, SJ&A sur, No. 17, sd 863 ft. Whipple et al's Gember 1, nw Dobrowolski district, lcn to be made.

BLANCO COUNTY—Hardy Sitton's Standeford 1, sur 155, 3 102 nw Blanco City, dr below 1100 ft last rept; McMillen 1, Benjamin Williams sur No. 125, 2 mi Blanco City, sd 686 ft. Forest Oil Co.'s (Rosenfield et al) Hohenberger, sur No. 94, sd 712 ft. Thomas Hicks et al's Specht & Wiedner 1, Thos. M. Fowler sur No. 27, 2 mi s Twin Sisters, dr 1065 ft.

CALDWELL COUNTY—Joe Bruner's Malone 1, A. Floyd sur, 2 lcns s Salt Flat, oil coming through mud, prep to complete, csg set 2395 ft, td 2572 ft mi se Lockhart, spudded and sd acct water. Mills & Chapman's McMahon 1, Pinchback sur, 6 mi sw Lockhart, plugged back from 2490 ft to 2175 ft, shot with 100 qts, no results, abn. Ralph Ogden's Mrs. Sue Nealson 1, John B. Gray sur, 3 mi n Lockhart, ru.

COMAL COUNTY—Caldwell & Lanier's T. J. Byler 1, 10 mi s Blanco City, HE&WT Sur No. S-894, sd 745 ft.

DE WITT COUNTY — Gibson & Strum's Clark 1, Dolores Alderete Sur, 3, mi s Yorktown, ru and sd.

DUVAL COUNTY—John F. Camp & Stanolind O&G Co.'s Hubbard 2, Sec 73 BS&F sur, 1 mi sw No. 1, 3 1/3 mi se S&O pool, reduce hole 2400 ft, core for sand. Cole Pet. Co.'s Benavides 70, e Cole field, move on. Duval Oil Co.'s Bishop Duval Land Co. 5, sw extension S&O pool, 660 ft w of No. 4, Sec. 135, dr 2200 ft. Frank Garvis's Shallert 1, sur 225, dr 1200 ft. Humble O&R Co.'s P. E. White 1, Sec 58, S&O pool, coring 2300 ft. Southern Gas Utilities Co.'s A. Benavides 1-E, nw cor sec 173, ru. Magnolia Pet. Co.'s Wilson 4, Sec. 134, S&O pool, set csg abt 2320 ft, dr in. Thomas & Tarver's Bishop Land and Cattle Co. 3, Sec. 135, S&O pool, dr in, csg set 2285 ft, sand 2292-94 ft.

FRIO COUNTY—Arthur H. Wray's Roche 1, Sec. 123, A. Hutzler sur, near Big Foot, 1500 ft sw Burns 1, dr 2065 ft, last rept.

GOLIAD COUNTY — Plymouth Oil Co.'s Parks 1, 2900 ft se Gibson Parks 1, move on. Stanolind O&G & John F. Camps Pettus 2, abt 2000 ft nw Pettus 1, set 136 ft surface csg, dr ahead.

GUADALUPE COUNTY—Harry Bruner's Jim Sherrill 2, Geo. Allen League, near Staples, sd 190 ft for rotary. John F. Camp's Dan Denman 1, Wm. Arrington sur, 2500 ft s Camp well, move on. Humble Oil & Ref. Co.'s Sue E. Denman 1-C, Camp pool, Darst Creek, 300 ft e Camp well, Wm. Arrington sur, flow 20 bbls hourly on ⅜ choke, 90 lbs. pressure, csg set 2472 ft, top Edwards 2510 ft, td 2532 ft; Dan Denman 1, Wm. Arrington sur, 2200 ft s Camp producer, lcn being made. Linne et al's J. E. Linne 1, 8 mi sw Seguin, V. Cortario sur, abn 1670 ft. C. McGarity et al's August Wesch 1, H. M. Thompson sur No. 89, 2 mi n Marion, sd 1200 ft. Schleter, Atherton & Armstrong's Ogletree 1, Robt. Smith sur, 1 mi n old Luling field, sd 1745 ft.

HAYS COUNTY—J. C. Jones et al's Byler 1, John Ingram sur, 15 mi nw San Marcos, sd 925 ft.

JIM HOGG COUNTY—D. C. DeWitt's T. Gomez 1, sec 12, sd 400 ft. Cole Pet. Co.'s Palacios 1, sur 231, 3 mi s and e Randado field, re-dr 1360 ft.

JIM WELLS COUNTY — Stanolind O&G Co.'s N. A. Hoffman 1, La Trinidad sur, 4½ mi sw Ben Bolt, dr 1000 ft.

KARNES COUNTY—V. F. Neuhaus's L. L. Russell 1, C. Martinez sur, just n Kennedy-Runge Highway, wait on rig. Jones et al's (J. Morrisey) Cochran 1, D. B. McConnell sur, w Kennedy, re-dr 1012 ft.

KENDALL COUNTY—Borgett et al's W. Hagg 1, w Avery sur, sd 1250 ft. F. S. Dibble's Elebracht 1, TW&NG Sur. No. 77, 12 mi n Sisterdale, sd 50 ft. Dixon Oil Co.'s Behr 1, Jessie Wilson sur, 3 mi s Sisterdale, dr 2713 ft at last rept. R. M. Perkins' (W. H. Sartain) Lawhorn 1, 30 ft sw original test, D. L. Richardson sur, sw Kendalia, dr 680 ft. Hardy Sitton's W. B. Garvin 1, D. L. Richardson sur, 1 mi ne Kendalia, sd 1480 ft.

KERR COUNTY—Evans and Gant's Seiker and Mears 1, CCSD&RGNR Ry. sur, sec 1605, 2 mi ne discovery, sd 4031 ft sandy shale; Jeff Love 1, J. Martinez sur No. 1594, sd 4060 ft, brown lime. Evans and Sprinkle's Jeff Love 2, sec 1592, ½ mi se discovery, sd for equip. 2984 ft. Chester A. Martin's J. E. Young 1m, A. E. Bruce sur, ne discovery, 1310, move on 12½-inch csg.

LA SALLE COUNTY—Buckley Ranch O&G Co.'s Buckley et al 1, sur 37, Buckley-Walling ranch, dr 1585 ft. Salt Lake City Oil Co.'s 2, 708 ft sw 1, Sec. 17, dr 900 ft.

LIVE OAK COUNTY—Henderson Coquat et al's H. Hewitt 1, Thomas Adams sur, sec 4, dr 445 ft.

MAVERICK COUNTY — I. N. Boicourt's Banders School Land 2, dr 2295 ft. Texas Gas Utilities Co.'s Chittim 8, sec 129, blk 7, I&GN sur, Chittim field, reaming 4810 ft.

McMULLEN COUNTY — A. E. Adams' Martin 1, L. E. Melon sur, 15 mi sw Tilden, dr 440 ft, no further rept. Brodie, Shearer and Emerich's Shiner 1, Henry Brewer sur, 12 mi se Tilden, sd 2006 ft.

MEDINA COUNTY — Frank A. Brown's Jacob Fohn 1, J. F. Tony sur, 8 mi s Hondo, dr 530 ft. Genard Bros.' L. Crawford 1, J. Keppler sur No. 488, temp abn 2145 ft. Medina O&G Co.'s R. J. Taylor 2, Sec. 135, Bruchet sur, complete 5 bbls, 16 gravity oil, 351 ft. National Oil Co.'s 1, lcn being made. Yan-

cey Dev. Co.'s Faseler 1, sur 801, 1½ mi n Yancey, T. Montier sur, abn 1945 ft.

NUECES COUNTY—Gulf Coast Oil Co.'s Sagarin 1, Sec 1V9, Kinney sur, Saxet field, dr 3020 ft, sand 2442-53 ft, show gas; Elder 1, nw Harrel 1, Saxet field, dr 4300 ft, sw sand. Neal-Milton & Kepley Prod. Co.'s Roark 1, 2000 ft nw Saxet Dunn, Saxet field, dr 4495 ft. Saxet Oil Co.'s McCampbell 1, H. L. Kinney sur, Saxet field, dr 2445 ft in sand. Stanolind O&G Co.'s (Southern Crude Oil Purchasing Co.) Chas. E. Stratton 1, sec 12, Stratton sub, P. Anchow sur, 6 mi s Agua Dulce, sand 4746-52 ft, deepened to 4765 ft, show 1200 lbs pressure on tubing, 1300 on csg, dropped to 675 lbs on tubing and 700 lbs on csg, closed in and blt 1800 lbs, put on ½ choke and dropped to 300 lbs, changing chokes. L. L. Smith's Alexander 1, Saxet field, set 447 ft surface csg.

REAL COUNTY — Evans and Sprinkle's Haby 1, AB&M sur, 7 mi sw Love 1, sec 175, set 8¼-inch csg 2560 ft.

REFUGIO COUNTY — Blanco Creek Oil Corp.'s Dammann 1, blk 16, Bonnie View ranch sub, 8 mi s and e Refugio field, dr 4685 ft last rept. Humble O&R Co.'s M. V. O'Conner 1, John Keathing sur, near Victoria line, dr 3275 ft. Larcro Gas & Pet. Co.'s Straunch 4, lot 6, blk 2, Refugio townsite, lcn made not to drill until after Oct. 15. Moody-Seagraves Prod. Co.'s Strauch 1, Refugio Blk 8, bldg dk over lcn to work over; O'Conner 4, plugged back from 5456 to 6380 ft, mill out. United Prod. Corp.'s O'Brien 6, Refugio, set csg 6450 ft; W. J. Fox 2-A, Wm. Hews and L. Brown sur, Refugio, dr 3125 ft; M. F. Lambert 4, Wm. Hews & L. Brown sur, Refugio, wait on cement, 5925 ft.

SAN PATRICIO COUNTY—Atlantic Oil Producing Company's Welder 1, Welder ranch, about 1½ miles from gas field, to make lcn. Welder Oil Corp.'s Welder 3, 900 ft ne No. 2, set surface csg about 400 ft; Welder 2, Welder gas field, sand 3648-60 ft, set csg 3646 ft, completed, show 1600 pounds pressure. Jacob, Buzzini & Pickett's Baldwin 1, O'Neill Sur, abn 4020 ft; Baldwin 2, 3½ mi s Welder gasser, T. Amarro sur, abn 3810 ft.

TRAVIS COUNTY—Fritz Fuchs' L. Ballerstadt 1, Amos Alexander sur, dr 1225 ft; A. F. Smith 1, Kimbor sur, lcn. C. R. Franklin's J. Wilson 1, A. Alexander sur, dr 304 ft. Henze & Ray's J. M. Hatch 1, center S. Hamilton sur, dr 110 ft.

VICTORIA COUNTY—Houston Oil Co.'s Konrad 1, T&NO sur, on Beck Salt Dome, n Victoria, prep to test, 8¼-inch csg set 4740 ft, corrected total depth 5018 ft. The Texas Company's McFadden 3, John M. Rine sur, nw No. 2, set csg 4278 ft for protection. United Prod. Co.'s McFadden 5-A, C. L. Mann sur, ne No. 4-A, sand 3754-59 ft, test 400 lbs in 7 min on ⅜-inch choke, csg set 3746 ft, completing.

WEBB COUNTY—Cole Pet. Co.'s (Carson) Benavides 2 (4), 12 mi e Laredo, sur 1601, sd abt 3950 ft. French Oil Corp.'s R. Benavides 6-A, Cole district, sur 659, dr 300 ft. Eugene Garner, Jr.'s, A. S. Billings 1, sur No. 71, dk. C. W. Killam's Bruni 2, Cole district, blk 18, sur 1618, dr 225 ft, last rept. Winfield Killam's S. N. Johnson 1, sec 1618, Coe district, ru. Mag. Pet. Co.'s Benavides 5-A, Cole district, sur, 660, csg set 2330 tt, top sand 2335 ft, dr out plugs. Geo. S. Marshall's Benavides 1, Carolina-Texas district, sur 683, lcn.

WILLIAMSON COUNTY — Citizens Oil Dev. Co.'s A. Forewood 2, A. S. Fisher sur, 5 mi ne Taylor, coring 1560 ft. H. Fritz et al's fee 2, HT&B Ry. sur, 3 mi sw Taylor, 35 ft n No. 1, dr 365 ft. Hays and Gee's E. G. Johnson 1, B. C. Low sur, s Georgetown, dr 1325 ft. R. S. Wilson's J. S. Speckely 1, J. Jordan sur, 1 mi n Coupland, dr 885 ft.

WILSON COUNTY—August M. Blume's Nickelson 1, C. Diaz sur, 2½ mi s Floresville, change from spudder to rotary, td 1245 ft.

ZAPATA COUNTY—E. K. Bateman's M. Garza Estate 1, blk 29, sub of Zorro ranch, Los Comitas Grant, s end of Muckelroy pool, spud in. F. H. Ettheridge's Henne-Winch 1, sur 286, ne Bustamante, dr 1100 ft. W. T. (Bill) Henry's Adams 1, blk 10, sur 4, Fullerton sub of Share 8, Borrego Grant, prep to re-dr 1375 ft. O. W. Killam's Cuellar 28-A, Cuellar extension, dr 400 ft; Cuellar 29-A, Cuellar extension, lcn. National Oil Co. of Texas' Luther et al, blk 97, Da Pron sub, ne ½ Porcion 6, sd 610 ft. Nielsen and Coursey's Adams (Luther et al) 1, blk 11, sec 5, Fullerton sub, Share 8, Borrego Grant, sd 1320 ft, to be dr deeper. Penny Prod. Co.'s Juan V. Cuellar et al 1, blk 1, sur 2, Pappas sub, Porcion 33 and 34, sd 2055 ft. Pray and Chamberlain Prod. Co. Inc.'s, (Whicker) Garza 4, blk 1, sub of Zorro ranch in Los Comitas Grant, s extension Muckelroy pool, set 6⅝ inch csg at 1352 ft, td 1361 ft, complete 75 bbls; Garza 1-C, to skid dk from No. 4. H. L. Sargent's Gutierrez 1, blk 3, Porcion 10, Borrego Grant, prep to spud. C. J. Webster O&G Co.'s P. B. Trevino 1, lcn. T. H. Ward's Uribe 1, sub of share 7, partition 6, Trinidad Uribe Partition of Juan V. Borrego Grant, ru and sd.

McCollum Exploration Co.

Contracts taken for Seismograph Work

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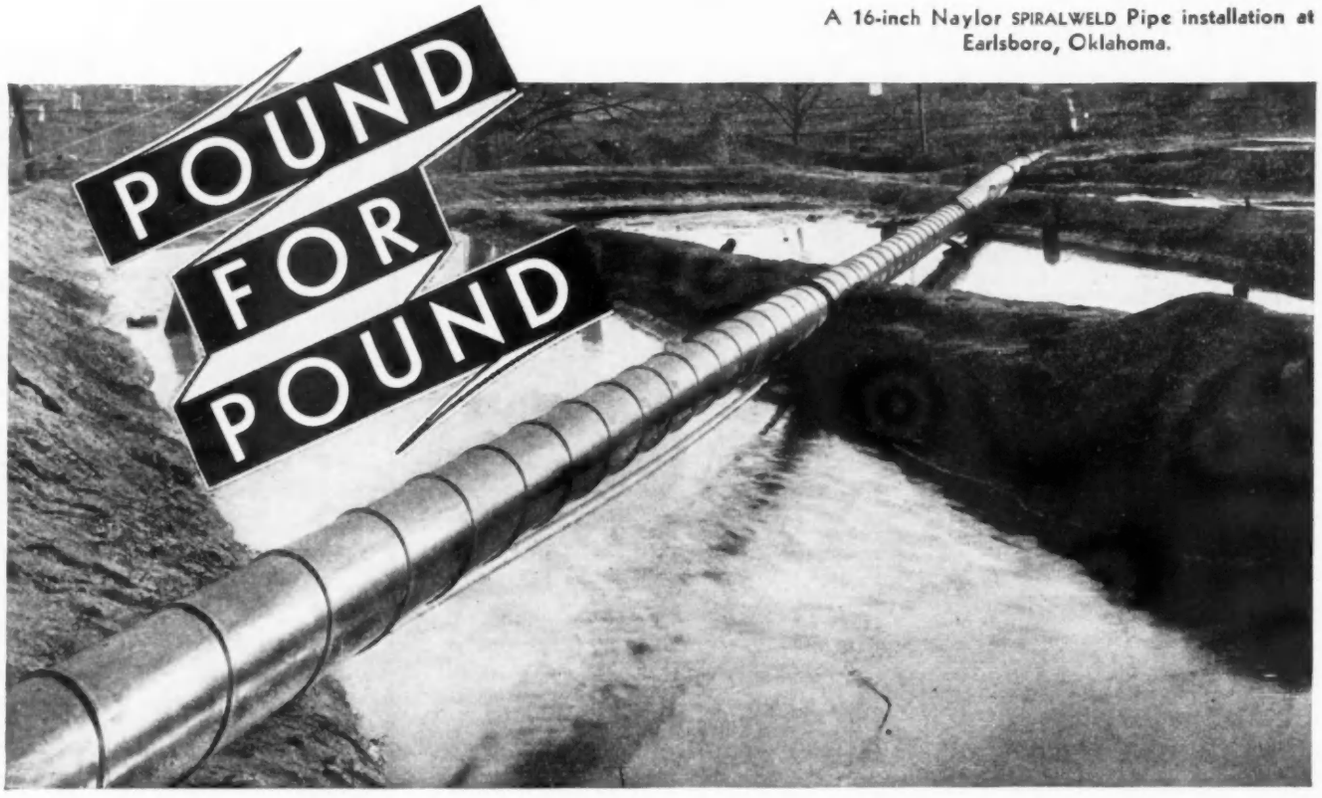
C. M. Heeter, Sons & Co. (Inc.)
Main Office and Works, Butler, Pa.

A 16-inch Naylor SPIRALWELD Pipe installation at Earlsboro, Oklahoma.



Naylor *SPIRALWELD* Pipe Is The *Strongest!*

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Because of its exceptional strength, Naylor SPIRALWELD Pipe is being used successfully for the same pressures as standard weight wrought Pipe—*yet it weighs one half as much!* The Naylor electrically welded spiral lock-seam truss not only provides maximum structural strength but minimum weight as well. And, a strong, light weight pipe—such as Naylor SPIRALWELD Pipe—is always a good pipe investment.

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New Equipment for the Field

MACHINERY - TOOLS CATALOGS - BOOKS

▼ ▼ ▼

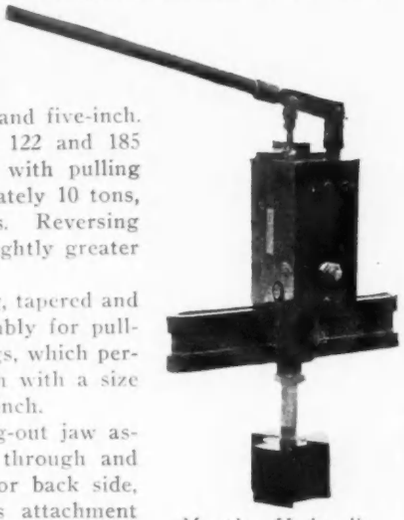
Portable Reversible Hydraulic Puller

MURPHY TOOL COMPANY, INC.

Murphy Tool Company, Inc., Houston, has put on the market a portable reversible, hydraulic puller.

It has been proven practicable in removing pump liners, replaceable cylinders, valve seats and stuck valves, bushings, couplings, catheads, gears, flywheels, shafting and innumerable other uses that suggest themselves to the field.

The portable reversible hydraulic puller is manufactured in three sizes: three-inch, four-inch and five-inch. The weights are 82, 122 and 185 pounds, respectively, with pulling capacity of approximately 10 tons, 20 tons, and 40 tons. Reversing the tool gives it a slightly greater "push."



Murphy Hydraulic Puller

It has an expanding, tapered and corrugated jaw assembly for pulling liners and bushings, which permits handling of such with a size variation of one-half inch.

It also has a spring-out jaw assembly for reaching through and engaging the under, or back side, of valve seats. This attachment can be used to pull liners without internal scoring, thereby permitting reclaiming of liners.

The standard size machines have a five-inch piston stroke. The rate of travel depends on the speed of operation of the handle but will average about two inches per minute.

The hydraulic fluid is a special filtered, low-pour oil of medium viscosity and low mineral acidity.

Other special features are: Other sizes affording any desired capacity; increased length of piston stroke; variable displacement plunger pump, permitting greater speed but a corresponding reduction in power; or a lower speed with full power, and mechanical operation of pump if desired.

Detailed information can be obtained by writing Murphy Tool Company, Inc., Box 721, Houston, Texas.

Triple Heated Sucker Rods

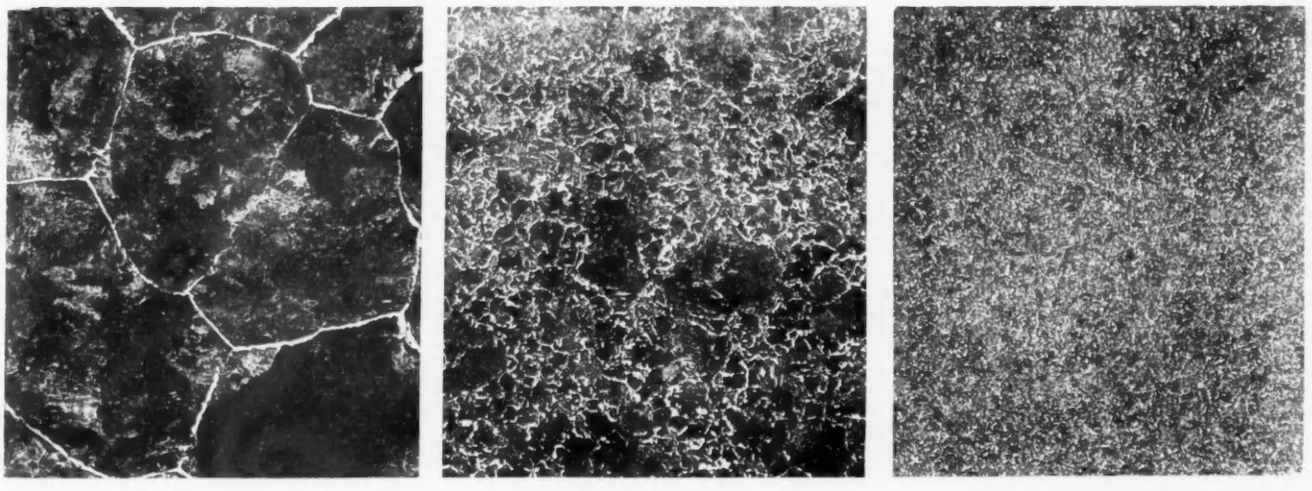
OIL WELL SUPPLY COMPANY

Oil Well Supply Company, Oil City, Pennsylvania, announces the development of its triple heat treatment for bringing out the desirable potential qualities of strength, toughness and ductility of steel used in sucker rod manufacture.

The first step in this triple heat treatment, normalizing, is described by the company as partially refining the very course grain structure produced by the high forging heats necessary for upsetting the ends of the rod to form the box or pin.

Working on the basis that normalizing does not secure the inherent qualities in the steel nor does not provide an adequate refinement of grain structure to insure the necessary combination of strength, toughness and ductility, the company's second step in triple heat treatment is heating the full length of the rod to slightly above its critical point and then quenching in water. This produces a very fine grained steel which, according to the explanation, is still too brittle and lacking in the ductility necessary for satisfactory sucker rod service. To change the brittleness to toughness and to secure the necessary ductility, the third step is resorted to. This consists of heating the full length rod to a drawing temperature which is below quenching heat and holding it uniformly at that temperature for several hours. The rod is then cooled in air.

Close technical control is maintained at all stages of



First Treatment *Second Treatment* *Third Treatment*

Photograph of "Oil Well" Triple Treatment Sucker Rod Steel

manufacture, from chemical analysis of raw stock received from the steel mill until the completed rod is finally approved. All forging and heat treating furnaces are pyrometer controlled so uniform results may be assured at all times. Physical property tests are systematically made on each batch of rods placed in the heat treating furnaces to make certain the desired results are being attained.

Sucker Rod Snap Wrench

NATIONAL SUPPLY COMPANIES

The National Supply Companies, Toledo, announce the new National sucker rod snap wrench, Type "B," which is designed for rapidly and conveniently making and breaking close fitting sucker rod threaded connections. The designers have sought particularly to eliminate increased bending stresses due to failure to properly shoulder the joints, a trouble which in the past has caused the failure of sucker rod pins.

The type "B" Snap Wrench consists of a wrench head and a handle; the handle extending through and being pivoted in the head. It is held in position by a pin which is loosely fitted in the handle inasmuch as it serves only to prevent the separation of head and handle. Two widely separated contact surfaces on the head and the handle take the blow in either direction. No load is carried on the pin. This results in a more direct transmission of the load from the handle into the wrench square.

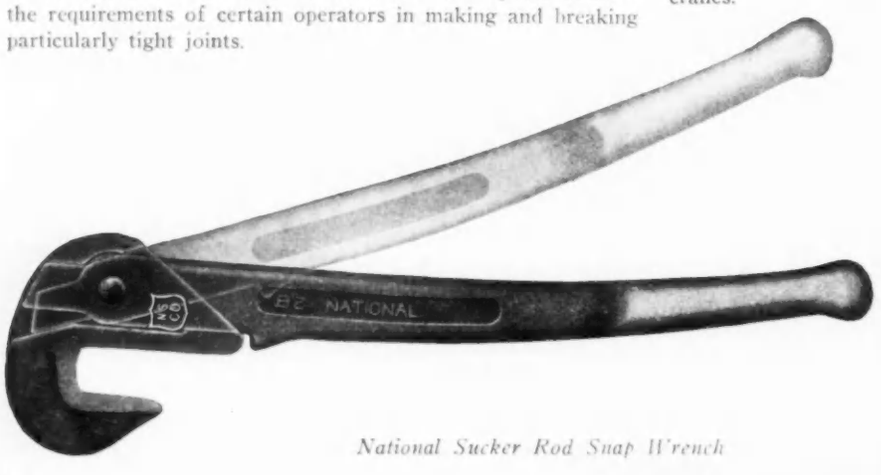
Both the head and handle are of steel. The head is alloy and is given a full heat treatment to develop maximum strength and resistance to fatigue and also to give a tough surface in the wrench opening to resist the peening action of the sucker rod square.

The striking surfaces are protected by being enclosed in the opening through the head and are guarded further by the design of the handle. The wrench opening is sufficiently deep to hold the wrench on the square while spinning the joint to the shoulder. The handle is shaped to avoid slipping and at the same time the back is straight to prevent bruising the operator's hand.

The type "B" wrench is made up in one size for ⅞ inch squares and with three weights of heads and four lengths of handles for one-inch squares. It is also available with one weight of head and two lengths of handles to fit the 1⅛ inch flats which are optional on double pin rod couplings.

The lighter weights of one-inch wrenches should be used for the 1 1/16 inch joints used on ¾ inch A. P. I. rods. The heavier weights on one-inch wrenches are intended for the 1 3/16 inch joints used on ⅞ inch A. P. I. rods and by National on their special ¾ inch rods with oversize joints.

The wrenches with 36-inch handles are made special to meet the requirements of certain operators in making and breaking particularly tight joints.



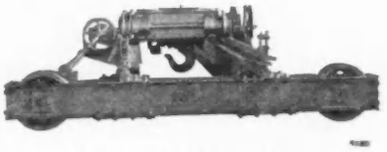
National Sucker Rod Snap Wrench

Hand Operated Crane

ROBBINS & MYERS, INC.

Robbins and Myers, Inc., Springfield, Ohio, announces a hand-operated crane specifically designed for use in pipe line compression stations and power houses but adaptable to a wide range of other industrial applications.

Occupying approximately 40 per cent less headroom than the standard equipment, this crane will give higher lift in existing buildings or permit a reduction in building height in buildings under construction.



Robbins & Myers Crane

This new crane is equipped with Hyatt bearings throughout with the exception of the load hook, which is supported on a Timken roller thrust bearing. The entire construction is welded steel. All gears and pinions are cut from solid alloy steel forgings. Trolley wheels and chain sheaves are of Aremite, a new light weight alloy metal having twice the tensile strength of grey iron. A two-speed hand wheel provides for double speed at half full load. The double helix cam nut is manganese bronze. A roller chain drive results in smoother operation and aids compact construction. The load brake is of twin disc design with steel ratchet and silent pawl.

Complete information will be supplied on request to Robbins and Myers, Incorporated, Springfield, Ohio.

Heavy Duty Crawlers

TRACKSON COMPANY

Trackson Company, Milwaukee, has produced a new heavy-duty crawler, known as Model GC, for the Case industrial tractor.

Equipped with this means of positive traction, the Case is adapted to a wide range of uses. The combination is suited not only to drawbar work but to equipment operation as well. Its design provides for the actual in-building of either front, side, or rear-end equipment. And the idea behind this design is to provide users with a type of crawler tractor that may be adapted to as many different uses as they have different attachments, such as shovels, loaders, bulldozers, hoists and cranes.

Extra heavy crawler frames, truck wheels and bearings provide ample strength for the great superimposed loads of equipment operation. Wide clearance between the crawlers and motor permits quick, secure attachment of the equipment and easy adjustment or lubrication of the crawler mechanism.

Crawlers are of all steel construction; the track shoes of heavy electric alloy steel, cast in one piece, and specially corrugated to grip securely without damaging road surfaces.

Manufacturer and Supply Dealer Notes

▼ ▼ ▼

Pittsburgh Steel Products Company, a division of the Pittsburgh Steel Company, largest manufacturer of seamless steel tubes, exclusively, is taking advantage of the present depression to launch a program of expansion in its facilities for manufacturing seamless steel tubing.

As a first step in this program it has announced the purchase from Aetna Standard Engineering Company, Youngstown, Ohio, of a complete new unit of the Push Bench Type. This is a process not hitherto used in this country in the manufacture of seamless steel tubes, although it employs as a basic principle the same method as used in the manufacture of steel shell forgings during the World War. This application of the forging method gives a very high quality tubing and it possesses many other advantages by giving the tubing a much better finish and a higher degree of accuracy on the diameter and the wall also producing longer lengths. The principal feature of this method is that it will be able to produce tubes of very small diameters by the "Hot Rolled" reducing process—which sizes formerly could only be produced by the more expensive method of cold drawing.

This innovation in the manufacture of seamless steel tubing is expected to greatly enlarge the field of application for seamless steel tubing in the smaller sizes. The product finds its principal outlet in oil country products, piping of all kinds, automotive parts, boiler tubes and mechanical tubing generally.

USL Battery Corporation's electric arc welder division, Niagara Falls, New York, was recently host to representatives of many outstanding electric welder manufacturers, at which time standard ratings of machines and the new Welding Manual were discussed. The new Welding Manual will describe various applications of electric welding, and each manufacturer is contributing a share of the material for it. A. A. MacLean, vice president of USL Battery Corporation, and J. L. Fosnight, sales manager electric arc welder division, were in charge of arrangements.

The photograph shows those in attendance as follows, reading left to right: Jack Amos, Hollup Corporation; F. E. Hall, USL Battery Corporation; J. F. Lincoln, Lincoln Electric Company; L. P. Hume, General Electric Company; C. J. Holslag, Electric Arc Cutting & Welding Company; E. W. Kronbach, Una Welding & Bonding Company; W. W. Reddie, Westinghouse Electric & Manufacturing Company; L. D. Meeker, General Electric Company; D. H. Kelly, USL Battery Corporation; E. D. Bransome, Wilson Welder & Metals Company; A. A. MacLean, USL Battery Corporation; O. F. Stroman, Westinghouse Electric & Manufacturing Company; J. L. Fosnight, USL Battery Corporation.

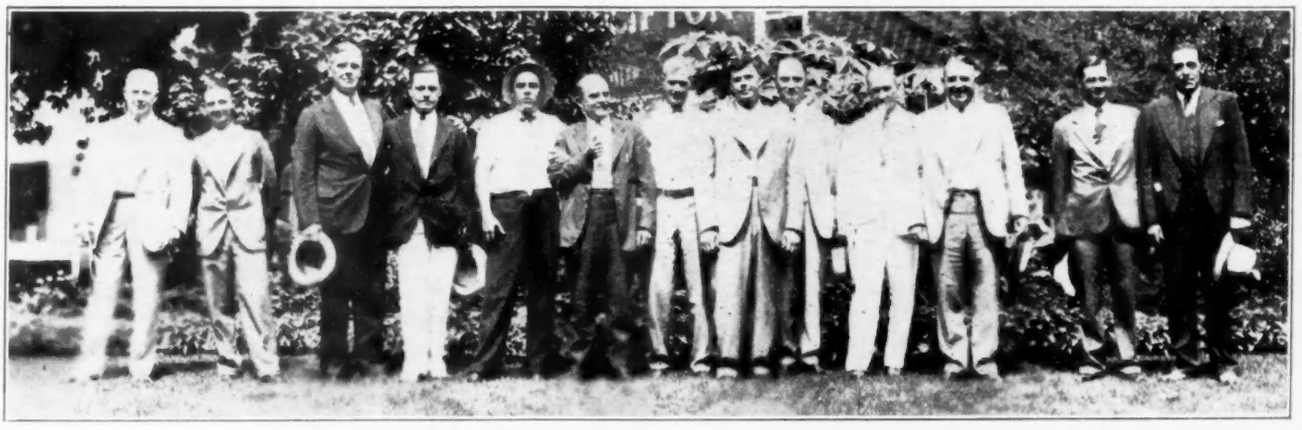
F. D. Hooper

Barber-Green Company, Aurora, Illinois, manufacturers of material handling equipment, announce the appointment as general sales manager of F. D. Hooper, formerly sales manager of Lidgerwood Manufacturing Company, Elizabeth, New Jersey.

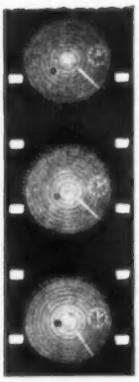
Hooper was born in New York City. He received his mechanical engineering and electrical engineering degrees at Sibley College, Cornell University, graduating in the class of 1907. He was employed by Lackawana Steel Company (now Bethlehem Steel) and Boston and Maine Railroad before starting his 24 years of continuous service with Lidgerwood Manufacturing Company.

Diamond Metal Company, with headquarters office and plant at 3411 Harrisburg Boulevard, Houston, manufacturers of hard facing metal for drill bits, was organized by W. T. Touchton, its president, who has been associated with the industry for the past 17 years. He was associated for 12 years with The Texas Company, and has spent the past five years in the sale of oil field equipment, working Texas, Oklahoma and New Mexico fields. With Touchton is associated R. G. Houser, who has been in the hard metal and bit business for the past seven years. Prior to coming to the Mid-Continent territory, Houser was connected with Mineral Conversion Company, Los Angeles, and was for some time owner and operator of one of the leading bit shops in the Los Angeles Basin fields.

Diamond Metal is made from 99.29 per cent pure tung-



Attend Electric Welders' Meeting at Niagara Falls



A Light Flashes.. A Picture is Made

Photographically and accurately, every few seconds, the **Surwel Clinograph** records not only the degree of deviation but the exact direction of the drift in making its well survey.

SURWEL Clinograph

is saving time, money and trouble in oil fields everywhere. Wells which have been abandoned in likely territory should be surveyed by the Surwel—it is **the** instrument to faithfully tell the true facts. Records both going in and coming out—accurately, quickly. Write for catalog on the **Surwel**—also on the **Syfo,** recognized as the best instrument for recording drilling progress.

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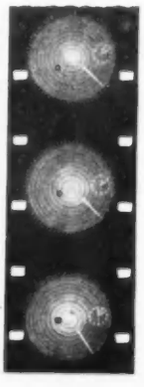

W. T. Touchton

R. G. Houser

sten to retain, when finished, 92.5 per cent tungsten. The company is manufacturing the product in various sizes, as needed, and the plant has a capacity for turning out 6000 pounds of tube and insert metal monthly.

Oil Well Supply Company and **Nuttall Works of Westinghouse Electric and Manufacturing Company's** ODH unit pumping powers, a new development, are described in a new publication identified by the companies as Circular 1928. These powers are for pumping at one-half to 30 strokes. The circular includes application and full description data as well as dimensions of the entire line of units. Copies are available through all branch stores of Oil Well Supply Company or any Westinghouse sales office.

L. H. Gilmer Company, Philadelphia, announces with regret the death, September 17, of A. D. Quinn, sales manager of the company's industrial division. Death resulted from heart disease while he was in Chicago on a business trip. He joined L. H. Gilmer Company in 1919, and three years later was made sales manager of the industrial division. To him belongs the major share of the credit for placing the Gilmer V-Belt in the industrial world.

Maintenance Engineering Corporation, 1400-2 Conti Street, Houston, announces representation of Timken Steel & Tube Company, Canton, Ohio, and Associated Alloy Steel Company, Cleveland, in this territory in handling the complete line of alloy tubes, alloy billets and other rolled products of high Chrome and Chrome-Nickel content.

Merco Nordstrom Valve Company, 343 Sansome Street, San Francisco, has issued a 172-page catalog, illustrating approximately 30 types of Nordstrom lubricated plug cock valves.

The catalog lists various types of valves made in different metals for handling different liquids, semi-liquids and gases, both neutral and acid; and it also lists steam jacketed valves, remote control valves and types with multi-ports, both in low and high pressure. Valves manufactured of bronze, aluminum and Mercalloy for handling corrosion-resistant liquids are also shown, and the catalog is illustrated with actual installations in approximately 20 industries.

Maintenance Engineering Corporation, 1400-2 Conti Street, Houston, has been appointed representative of Hall Laboratories, Inc., and Hagan Corporation, both of Pittsburgh, in this territory. Sales and service in R. E. Hall's method of boiler water treatment and a large stock of Hagan Phosphate are now available to the trade from Houston.

The School of HARD KNOCKS

A drilling bit cannot be built on the drawing board. Neither labor nor shop alone can produce it. The APPLEMAN BIT was designed right in the first place and the 'bugs' all taken out of it after long use on the lease. You run no chances when you standardize on the well proven, thoroughly tested and acknowledgedly superior APPLEMAN GUMBO BIT.

WATER COURSES lead direct to cutting edge, producing maximum cooling effect.
SELF SHARPENING EDGES due to concavely formed blades.
SIDE WALL CUTTING: Cuts side wall as it drills. Accomplishes full round hole and well prepared side wall. Holds gauge longer. Reaming rarely necessary.
STRAIGHT HOLE: Less weight is needed to feed the bit. Drillers who use APPLEMANS for the first time are astounded at how straight a hole they can drill.

WRITE FOR COMPLETE INFORMATION

B.K. APPLEMAN
BEAUMONT, TEXAS

Squeaks From the Bull Wheel

▼ ▼ ▼

"These shirts simply laugh at the laundry, sir."

"I know. I've had some come back with their sides split."

There's something sort of pathetic about a horse-fly sitting on the radiator of a Farmall.

He is all the world to me. What would you advise me to do?

See a little more of the world, my dear.

Driver of Collegiate Car: Do you do repairing here?

Garage Owner: Yeah, but we don't do manufacturing.

Lady: "I've called you in about a damp patch in the kitchen."

Plumber: "'Ere! Steady, lady! Strong lauguage never 'elped!"

He was new to the course. "Caddie, caddie," he wailed, "this is a terrible course."

Caddie—"Why, sir, you left the course 20 minutes ago. You're in Mrs. Gaffey's rock garden now."

"You were swindled over that 'genuine' Rubens you bought. It is not 50 years old."

"I don't mind that so long as it is a genuine Rubens."

A doctor was called upon to attend the butler of an aristocratic but impecunious patient. A superficial examination revealed the fact that there was nothing whatever the matter with him.

"It's like this, sir," said the butler in a hoarse whisper, "'er ladyship owes me six pounds in wages, and I'm going to stop 'ere until I get it."

"Move over," said the doctor. "She owes me 50."

"Jones—er—I think I'll run out for a little gold this afternoon. And I wish you'd take care of our daily Wall Street letter. You know our style, Jones. Everything boiled down. Terse. To the point. Nothing but the absolute essentials. Ah—I hardly know just what to feature today. What do you think the market will do next?"

"I haven't the slightest idea, sir."

"Fine. Great. But remember to be brief, Jones. See if you can't say that in three thousand words."—Judge.

Colored Storekeeper—You say you wants a new razor? Well, brother, heah's one dat ah'm sure will give you sattisfaction.

Colored Customer—Will it cut good?

Storekeeper—Will it cut? Man, it'll cut through two suits of clothes and an overcoat.

Teacher—Johnny, how old is a person who was born in 1890?

Johnny—Man or woman?

A real estate man was plainly worried, and his wife asked him to tell her about the deal. It seems that he had it fixed up to sell a man a loft building, a marble yard with dock privileges, a factory site, and a summer garden, and take in part payment a block of frame tenements, a small sub-division, an abandoned lime kiln and a farm.

"He assumes a $20,000 mortgage on the loft building," explained the real estate man, "and I take over a small second mortgage on the subdivision. Do you understand?"

"I guess I get you," responded his wife, "But what is the hitch about?"

"Well, I want four dollars in cash."

"So your husband tried to get a government post? What is he doing now?"

"Nothing; he got the post."

The absent minded professor drove up to his garage door, looked inside, and blinked. Then he leaped back into the car and drove like fury to the police station.

"Sergeant," he gasped, "my garage is empty. My car's been stolen."

There had been a motor wreck. One of the drivers climbed out in a fit of temper and strode up to a man standing on the sidewalk, thinking him to be the other driver.

"Say, where the devil's your tail light?" he roared.

The innocent bystander looked up at him. "Wot do you think I am a lightning bug?" he retorted.

Wifey—There's an old clothes man at the door.

Hubby—Tell him I've got all I need.

Old Lady (to Tommy)—Surely your mother could find pieces of material more like your trousers when she patches them.

Tommy—That ain't a patch; that's me.

Really, gentlemen," said the election candidate, "with all this uproar I can hardly hear myself speak."

"Well, cheer up," shouted a man, "you aren't missing much."

Joan, five, out to tea, was puzzled when she saw the family bow their heads for grace.

"What are you doing?" she asked.

"Giving thanks for our daily bread," she was told. "Don't you give thanks at home, Joan?"

"No," said Joan, "we pay for our bread."

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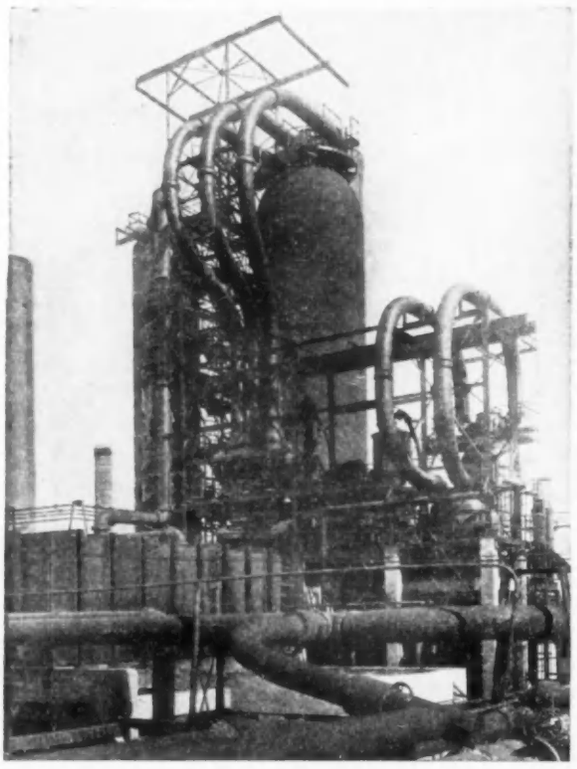

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